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ABSTRACT

This document presents testimony and prepared statements concerning Title II (Library Programs) of the Higher Education Act of 1965, and addresses ways in which to enhance and strengthen the resources and roles of academic libraries and information technology. Those giving testimony and/or providing prepared statements are the following: Richard M. Dougherty, president, American Library Association; Martha Bowman, Director of Libraries, University of Missouri, Columbia; E. J. Josey, School of Library and Information Science, University of Pittsburg; Elaine Albright, Director, Fogler Library, University of Maine; and Hiram L. Davis, Director of Libraries, Michigan State University. Additional statements are presented from Hon. William J. Jefferson and Hon. William F. Goodling, both members of the House of Representatives. (GLR)

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HEARING ON THE REAUTHORIZATION OF THE HIGHER EDUCATION ACT OF 1965: LIBRARY PROGRAMS

ED342343

HEARING

BEFORE THE

SUBCOMMITTEE ON POSTSECONDARY EDUCATION

OF THE

COMMITTEE ON EDUCATION AND LABOR

HOUSE OF REPRESENTATIVES

ONE HUNDRED SECOND CONGRESS

FIRST SESSION

HEARING HELD IN WASHINGTON, DC, APRIL 16, 1991

Serial No. 102-35

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HEARING ON THE REAUTHORIZATION OF THE HIGHER EDUCATION ACT OF 1965

TUESDAY, APRIL 16, 1991

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON POSTSECONDARY EDUCATION,
COMMITTEE ON EDUCATION AND LABOR,
Washington, DC.

The subcommittee met, pursuant to call, at 10:17 a.m., in Room 2175 Rayburn House Office Building, Hon. William D. Ford [Chairman] presiding.

Members present: Representatives Ford, Kildee, Payne, Unsoeld, Washington, Jefferson, Coleman, Molinari, and Gunderson.

Staff present: Tom Wolanin, staff director; Diane Stark, legislative associate; Beth Buehlmann, education coordinator; Jo-Marie St. Martin, counsel; and Michael Lance, professional staff member.

Chairman FORD. Today the Subcommittee on Postsecondary Education convenes to conduct our first hearing on the reauthorization of the Higher Education Act of 1965.

The focus of this hearing is on Title II academic library and information technology enhancement. I am particularly pleased that the subcommittee is able to conduct this hearing during National Library Week, when many people who have a special interest in this part of the legislation are here in town.

Title II is one of the original titles of the Higher Education Act of 1965. I might say, parenthetically—without pointing to individuals—I see at least one, very beautiful, smiling face here that was teaching Bill Ford about Title II in 1965 when we passed the act, and she has been teaching me ever since. If you don't know who she is, I'll be glad, once I get her permission to admit how many years she has been around here, to tell you who she is.

It recognizes that the Nation's academic libraries play an integral role in the quality of education that students receive in our institutions of higher education. The programs authorized in Title II assist in ensuring that the academic libraries are equipped with the latest technology and are staffed with well-trained personnel.

Title II is also concerned with strengthening the resources of research libraries. I look forward to hearing the comments and suggestions that the witnesses have for these important programs.

I might observe, for the record, that when we passed the Elementary and Secondary Act and then the Higher Education Act in 1965, we literally dried up the supply of trained librarians in this country, and then had to revisit the problem to figure out how we

could encourage more people to go to college and become librarians.

It was our perhaps naive ambition to see a library in every school in the country, and we were shocked when we found out how many junior high school and high school buildings were bereft of anything even called a library, but there just weren't enough librarians in this country when we asked people to go out and beef up their library services.

We came back, at the suggestion of some of our friends, with some inducements to bring people in. There may well be people in this room who were induced during that period of time to pursue this as a career. Our committee now has, as you know, a Member from New York who was a career librarian, and he gives us a lot of guidance on these issues.

I would now like to recognize the ranking Republican on the subcommittee, who we know participated in the last reauthorization of the Higher Education Act and is very important to this reauthorization.

Mr. Coleman.

Mr. COLEMAN. Thank you, Mr. Chairman.

Very briefly, I also want to welcome those in attendance today. I know that this hearing makes it easy on all of us by having people in town and to do it during National Library Week.

We especially want to welcome Martha Bowman, who will be here testifying here, from my State of Missouri. Although she claims to be a Washingtonian native by birth, she also claims heritage back in our State. So we're glad to have her here.

Libraries have taken on a totally different format and purpose, if you will, in many cases, through the years and through the ages, and we are well within the new age of high-tech and additional responsibilities for our library systems. I look forward to the testimony and to the reauthorization.

And I note, as Chairman Ford did, that we are seeing a lot of our librarian pool dry up at the university level, and that's something that ought to concern all of us. Hopefully, you will be able to tell us how and what we can do to deal with that.

So thank you, Mr. Chairman. I have a statement that I will put in the record, and I also ask unanimous consent that Mr. Goodling's statement be submitted at this point in the record, as well.

[The prepared statements of Hon. E. Thomas Coleman and Hon. William F. Goodling follow:]

STATEMENT OF HON. E. THOMAS COLEMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

I would like to welcome the witnesses testifying before the Subcommittee on Postsecondary Education this morning. It is appropriate that the subcommittee holds its first reauthorization hearing on Title II library programs in conjunction with national "Library Week."

I would like to extend a particularly warm welcome to Martha Bowman, Director of the University of Missouri-Columbia library, who represents the statewide University of Missouri system. I know that Title II support for library activities in Missouri have been important, and Mrs. Bowman I want to thank you for coming to Washington to be with us this morning. I look forward to hearing your testimony.

Libraries play a critical role in education. Libraries were essential to education—as collection and access points of recorded information-even before colleges and universities developed. Access to information has changed over time. Before the advent

of the printing press, access meant that scholars could enter a library to read and study manuscripts and books. By the eighteenth century, access meant the ability to borrow books, even taking them from the library itself. In the 20th century, computer technology has enabled us to identify which of the millions held in libraries can be accessed for study and learning.

In this Age of Information, the meaning of access and the role of libraries is changing radically. Access increasingly involves computers and telecommunications networks and the ability to use and share information which may never be formally published in book form or appear physically on a library shelf.

The role of libraries—traditionally that of provider and guide to information-is undergoing a fundamental change, as libraries respond to the challenges of organizing and managing overwhelming amounts of information and new knowledge.

Advances in computer and telecommunications technologies, such as the proposed National Research and Education Network, a high speed, super highway for data transmission, will mean that libraries in the coming decade and 21st century must have additional resources to enable them to take advantage of technological advances.

Federal support for academic and research libraries remains important. Just as the Federal Government supports basic research and development in the national interest, so it should support the dissemination and availability of research as part of the return on that investment.

Libraries share information resources and connect local campuses across international and geological boundaries.

And libraries are sources for training the new generation of librarians with new skills which we will need in the coming years. Higher education is facing an attrition of almost half the current university librarian pool, as library school faculty retire over the coming 10–15 years. Mary Lenox, the Dean of the School of Library and Information Science has written about the importance of Title II(B) to her own life and professional growth and to the development of many library professionals now serving in the field.

In an economy which is increasingly information-driven, libraries will continue as important national resources. Clearly, there is strong Federal interest, as we focus on higher education, to maintain the broadest possible access to that information and learning by students on the campuses of our colleges and universities.

STATEMENT OF HON. WILLIAM F. GOODLING, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF PENNSYLVANIA

Mr. Chairman, I wish to thank you for holding a hearing today on the Reauthorization of the Higher Education Act, which will focus on the Title II programs, Libraries and Information Technology. Although the programs are small in appropriations, just under $11 million in total, they are extremely important for library research, training, and collections. Libraries are the resource infrastructure which support education.

I am especially interested in learning more about the National Research and Education Network (NREN), a high-capacity, high-quality computer network which supports a broad set of network services for research and education. I am hopeful that through NREN we will be able to connect existing supercomputer centers to accommodate the massive amounts of data produced by high-performance computer projects. I have been working with the Science, Space, and Technology Committee to improve the proposal in order to make the system more responsive to the needs of classroom education at all levels. Libraries would certainly be an important component of this effort.

Again, I wish to thank Chairman Ford for this hearing and I wish to thank the witnesses for their testimony. I look forward to hearing from each of you today. I am certain that your recommendations will guide us wisely for decisions we will be required to make for the reauthorization.

Chairman FORD. Mr. Jefferson.

Mr. JEFFERSON. Mr. Chairman and distinguished colleagues, I also have a statement I would like to place in the record. I will make some brief comments, if I might.

Chairman FORD. Without objection.

Mr. JEFFERSON. I would like to commend this Subcommittee on Postsecondary Education for holding this important hearing on the

Higher Education Act Title II library programs. It is especially fitting as Congress and the country observe National Library Week.

Unfortunately, while this body, along with countless numbers of educators, researchers, and students recognize the vital importance of Title II library programs, our President and the Administration apparently do not. By proposing to eliminate Title II programs for fiscal year 1992, the President is sending America's colleges and universities and those they seek to educate a most disheartening message that he is willing to mouth the words "educational excellence," but he is not willing to invest in the programs that can make such excellence realizable.

The reauthorization of Title II programs is a perfect opportunity to reaffirm the commitment of the State governors and the White House to make American students first in the world in academic achievement. But how is this goal furthered by handicapping students with respect to the quality and quantity of information they have access to and by severely weakening institutions of higher learning? I urge the President to rethink his education budget.

With respect to Title II-B award grants for library training, the research and demonstration projects that upgrade libraries and foster new techniques are contained in this particular provision. Commendably, since the program began in 1966, almost 21,000 persons have been assisted by fellowships and institute programs, many of them minorities, many of them in areas of library specialization where shortages of qualified personnel exist.

I will just say, with respect to my district, Mr. Chairman, Tulane University in my district in New Orleans has greatly benefitted from Title II-C programs, and I want to express my appreciation on behalf of Tulane for the availability of these funds.

Tulane is host to the Amasted collection, a gathering of manuscripts on African-American and other ethnic studies. With Title C funds, Tulane was able to catalogue many of these materials and connect them to a national data base, thereby making them accessible nationwide. Tulane has applied for an additional grant to catalogue the remainder of the manuscripts. If the Title II-C is zeroed out, along with it will go access to these historically important documents.

Strong libraries are the backbones of our institutions, institutions we rely upon to produce the professional experts and skilled technicians that help sustain the economy's momentum and growth, not just through labor power, but through the power of ideas, innovation, and R&D that libraries support.

Finally, strong libraries are inextricably bound to our Nation's future competitiveness in the world context. We hear a lot about "work force 2000" and the changes it will bring to our economy. More jobs will require higher skill levels and postsecondary education and beyond.

My friends, the graduating class of the year 2000 is about to enter the fourth grade. Now is the time to strengthen Title II programs, not zero them out. Helping our students achieve educational excellence and meeting the needs of the future require that we do no less.

Thank you, Mr. Chairman.

[The prepared statement of Hon. William J. Jefferson follows:]

STATEMENT OF HON. WILLIAM J. JEFFERSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF LOUISIANA

I would like to commend this Subcommittee on Postsecondary Education for holding this important hearing on the Higher Education Act Title II Library Programs. It is especially fitting as Congress and the country observe National Library Week.

Unfortunately, while this body, along with countless numbers of educators, researchers, and students, recognize the vital importance of Title II Library programs, our President does not. By proposing to eliminate Title II programs for fiscal year 1992, President Bush is sending America's colleges and universities, and those they seek to educate a most disheartening message: that he is willing to mouth the words "educational excellence," but he is not willing to invest in the programs that can make such excellence realizable.

The reauthorization of Title II programs is a perfect opportunity to reaffirm the commitment of the State governors and the White House to make American students first in the world in academic achievement. But how is this goal furthered by handicapping students respecting quality and quantity of information they have access to, and by severely weakening institutions of higher learning? I urge the President to rethink his education budget.

Title II B award grants for library training as well as research and demonstration projects that upgrade libraries and foster new techniques of information transfer and communication technology. Commendably, since the program began in 1966, almost 21,000 persons have been assisted by fellowships and institute programs—many of them minorities, many of them in areas of library specialization where shortages of qualified personnel exist.

Title II C helps libraries maintain and strengthen their collections and make their holdings available to other libraries whose patrons require more research material than their own library holds in-house. Because of Title II C funds hundreds of thousands of research materials on all subjects have become accessible to students and scholars where it would otherwise have been unavailable.

Tulane University in my district of New Orleans has greatly benefited from Title II C programs. And I want to express my appreciation on behalf of Tulane for the availability of these finds. Tulane is host to the Amasted collection, a gathering of manuscripts on African American and other ethnic studies. With Title C funds Tulane was able to catalog many of these materials and connect them to a national data base, thereby making them accessible nationwide. Tulane has applied for an additional grant to catalog the remainder of the manuscripts. If the Title II C program is zeroed out, along with it will go access to these historically important documents.

Title D provides funding for technological equipment for sharing of library resources. In today's changing times, the volume of information on every subject is growing at a much faster rate than the dollars libraries have to spend for purchasing these resources. It is impossible for a library to house all the relevant materials necessary for scholarly research. The technology libraries need to participate in networks for sharing holdings is not a luxury, but an imperative.

Strong libraries are the backbones of our institutions—institutions we rely upon to produce the professional experts and skilled technicians that help sustain the economy's momentum and growth not just through labor power, but through the power of ideas, innovation, and R&D that libraries support.

Finally, strong libraries are inextricably bound to our Nation's future competitiveness in the world context. We hear a lot about "workforce 2000" and the changes it will bring to our economy—more jobs will require higher skill levels and postsecondary education or beyond. My friends, the graduating class of the year 2000 is about to enter the fourth grade. Now is the time to strengthen Title II programs, not zero them out. Helping our students achieve "educational excellence" and meeting the needs of the future requires that we do no less.

Chairman FORD. Thank you.

Mrs. Unsoeld.

Mrs. UNSOELD. I just want to welcome not only the panel but the others who are here today. I am here to learn, to be supportive. And since we're going to be interrupted with a special session, I will yield my time to you.

Mr. KILDEE. [presiding] The Chair also—Acting Chair—Mr. Ford had to meet with Mr. Brooks for a moment—welcomes the panel this morning, particularly Dr. Richard M. Dougherty of the Univer-

sity of Michigan, where I received my master's degree and where my son, David, is a junior. Although he tells me he's an academic senior, he's in the third year at the University of Michigan.

Also, Mr. Hiram Davis, of Michigan State University, where my youngest son, Paul, is a freshman. I also have a daughter who is a sophomore at Eastern Michigan. It's a real challenge right now. And they all use the library, I know that.

Dr. Dougherty, you may begin your testimony.

STATEMENT OF RICHARD M. DOUGHERTY, PROFESSOR, SCHOOL OF INFORMATION AND LIBRARY STUDIES, UNIVERSITY OF MICHIGAN, AND PRESIDENT, AMERICAN LIBRARY ASSOCIATION

Mr. DOUGHERTY. Thank you, Congressman Kildee.

I am Richard Dougherty. I am the president of the American Library Association, and I am also a professor in the School of Information and Library Studies at the U of M.

And I confess, as of yesterday, I decided to call myself a rather absent-minded professor. I don't know if you're familiar with flight 232 Northwest. Yesterday I rushed from my office to catch my flight, and, of course, we waited three hours to catch flight 234. This morning, when I was going through my papers, I found I had my Indiana presentation instead.

So what I thought I would do for my short contribution, simply try to highlight a couple of examples from my testimony. I think my colleagues have done an extremely able job of covering in detail Titles A, B, C, and D, but I'd like to cite three examples that I'm directly concerned with, and I think they illustrate the benefits of Title II-C and the contributions it has made.

In fact, I can't think of very many pieces of legislation in which as much leveraging has taken place as with Title II-C and now Title II-D.

I noticed in this brand new publication that is put out by the Association of Research Libraries, it documents some of the accomplishments of Title II-C. I notice the second case study is a project, a joint project, Wayne State, Michigan State, and Michigan, to create bibliographic records. It doesn't sound very sexy, but that project made it possible for us to make available 150,000 titles of bibliographic records, which libraries, not only in Michigan, Upper Peninsula and across the country, for the first time had access to. Without Title II-C, that would not have happened.

Secondly—and you referred earlier to the problems with education—I think the words "crisis" and "critical" are overused words. The one I would like to use to characterize the future of library education right now, unless we can turn things around, is just plain bleak. There's no question but the pool of librarians is drying up at just the time when they are most needed.

Secondly, and maybe of even greater concern, is that the pool of library faculty, Ph.D.s, is also drying up. And, as Professor Josey will talk about, the impact of Title II-B in the early years has been extraordinary. We not only need funding continued, we really need to have this program strengthened.

Finally, I would like to point out that, as we approach the era of the network, the NREN is the expression that's so commonly used, that this provides an unparalleled opportunity for libraries to share resources. There is a project in Michigan we call M-Link, and what it really means is that seven public libraries, from Hancock in the north to Bay City, Lapeer and Farmington Hills in our part of the State, are linked to our library electronically, not only to the on-line catalogue of the library, but also to the reference librarians.

What we have been able to do is to provide information services, not just publications, to these communities. And this is the kind of activity that can be carried on in a network society, if the libraries are participants in the Title II-C and the Title II-B projects or titles are those that will make it all possible. It is extremely important now.

Thank you.

[The prepared statement of Richard M. Dougherty follows:]

Statement of
Dr. Richard M. Dougherty
President
American Library Association

before the
Subcommittee on Postsecondary Education
House Committee on Education and Labor

on
Reauthorization of the Higher Education Act

April 16, 1991

I am Dr. Richard M. Dougherty, Professor at the School of Information and Library Studies at the University of Michigan, and President of the American Library Association. The Association is a nonprofit, educational organization of 52,000 librarians, library educators, library trustees and other friends of libraries. Since the enactment of the Higher Education Act, I have been an involved and active observer as an administrator of two large university libraries — the Universities of California-Berkeley, and Michigan — and as an educator, researcher, editor and writer, and publisher. My firm, Mountainside Publishing, Inc., publishes the *Journal of Academic Librarianship, Library Issues: Briefings for Faculty and Administrators*, and *Research Strategies: a Journal of Library Concepts and Instruction*, as well as other titles.

Federal Role. College and research libraries collectively represent the resource infrastructure which supports not only undergraduate and graduate education, but academic research and development as well as laboratory, experimental, and developmental research by scholars and researchers at locations beyond the campus, ranging from field sites to industrial labs to supercomputer centers. Academic and research librarians have

organized for effective access collective resources which represent our national history, and increasingly, that of the world as well, in all subject fields and languages.

The benefits of access to library resources and to librarian expertise flow freely beyond those who teach or pay tuition at any one campus. This "public good" characteristic of academic and research libraries is in the national interest as it fosters U.S. educational achievement, economic development, and informed government and citizen decision making. For example, the concentrations of excellent library resources in California, North Carolina, and Massachusetts helped to attract academic expertise and high-tech companies to those areas.

With the stimulus of federal assistance, librarians have enhanced this "public good" aspect of information flow to share library resources across institutional, local, and state boundaries. Through joint catalogs and nationwide online databases of bibliographic information, scholars and officials are able to locate unique materials and to determine whether a book has been preserved through microfilming or other techniques. Cooperative library networks also make available an extraordinary variety of electronic resources. This intricate and somewhat delicate but effective structure depends upon each individual library's willingness to support activities <u>beyond</u> those directly attributable to the needs of its own institution's faculty and students. It is also very much dependent upon sources of external financial support for the innovation and technological experimentation necessary to keep such cooperation viable.

The ultimate aim is to provide to each student, scholar and researcher, wherever located, the specific information he or she needs in a timely and affordable manner, and in the format and depth needed. The federal government has a long history of assistance in meeting this goal, through such indirect means as the collection of national data about libraries by the Department of Education and its predecessor agencies, and subsidized postal rates for libraries and educational institutions; and through direct aid, such as the national programs of the Library of Congress and other national libraries, and grant programs under the Library Services and Construction Act, the National Endowment for the Humanities, and the Higher Education Act.

Leveraging Federal Funds. For 25 years libraries have, with a modest federal stimulus, organized, standardized, and shared information about the existence and location of published materials, using the latest information technologies. The library community has leveraged federal and other investment funds to catalog an item once and share the information widely. Now we can help leverage the federal technological investment. Libraries are at the threshold of a new era of electronic networked information made possible by high performance computers and high-speed, high-capacity electronic networks such as the National Research and Education Network.

Supercomputers and super networks are needed to address "grand challenges" such as global climate change and the mapping of the human genome, but such advanced computing and communications capacity also makes possible the transmission of unprecedented

volumes of electronic data and information. Academic and research libraries are expected to become major nodes on the NREN, and thus face their own set of "grand challenges" for the 21st century.

Electronic Networked Environment. The Higher Education Act title II is being recommended by ALA, other library associations, and the higher education community for reauthorization with a new name to reflect a new focus — "Academic Libraries in an Electronic Networked Environment." It is a tribute to this Subcommittee that the language of title II proved flexible enough to need only modest amendments to reflect this new focus. Reauthorization with the amendments submitted to the Subcommittee earlier this month by ALA and the Association of Research Libraries would provide a stimulus for academic and research libraries, together with library education programs, to:

- Shift roles from acquiring materials "just-in-case" they are needed to procuring (from whatever source wherever located) the precise information "just-in-time" for use;
- Enable smaller and needier institutions to gain basic library connectivity to the new electronic networked environment;
- Enable libraries to use technology to provide library and information services to the disabled;
- Organize and make available for electronic sharing the rich and unique non-print resources of libraries — photos, maps, prints, manuscripts, sound recordings, video, etc.

- Develop the equivalent of a bibliographic structure for the exponentially increasing amounts of electronic data and information;
- Preserve electronic as well as traditional forms of library and information resources; and
- Educate a new generation of library and information professionals recruited from diverse backgrounds to provide services in the new electronic networked environment.

In this dynamic environment, our tools and our education become obsolete quickly. Many libraries — at urban universities under stress, at isolated rural colleges, at developing institutions — need assistance to enter the world of shared electronic information. The II-D College Library Technology and Cooperation Grants have been especially helpful. ALA recommends that this program replace the current and unfunded II-A college library resources program as the flagship of the Higher Education Act library title.

We not only need libraries which are technologically linked to networks, we will need librarians who understand how to use the information technologies, how the literatures of disciplines are structured, and how to match the products of information systems with the needs of users. To accomplish these goals, the next generation of librarians must be technically literate, must be knowledgeable about the ethics of information, must know how to organize information, and must appreciate the philosophical implications for an information-based society. This new generation of librarians must be educated and nurtured by faculty who are

capable of providing a broad overview and understanding of technology-based information environments.

Shortage of Faculty. No other field is educating its professionals to do what librarians are doing. However, we already face a shortage of faculty, due to the closing of some library schools, the decrease in financial support, the higher than average age of library school faculty, and fewer librarians with Ph.D.s going into teaching. The HEA II-B program of assistance for education and research should be continued and strengthened. An example from my own institution will explain why. As part of a restructuring of its strong doctoral program in information and library studies, the University of Michigan realized it would not attract first rate candidates without providing support. Using donated and other funds, the school advertised one — just one — $25,000 fellowship. It generated two and one-half times the number of candidates we had at this time last year (25 compared with 10). The prospect of substantial support attracted excellent candidates — so good that the university was able to get a Regents' scholarship and two HEA II-B fellowships to support a few more of them.

Robert Warner, the dean of my library school and a former U.S. Archivist, explains how crucial such support is to the supply of library school faculty:

> The profession of library and information studies has fewer than 2,500 persons holding doctoral degrees and these individuals have been and continue to be a critical component in the ability to continue the research,

assessment, and education activities that are so important to the field itself and the education of the country's information specialists.

Normally a doctorate in library and information studies requires a five-year commitment. Beginning faculty salaries in the field rarely exceed $35,000; therefore, it is virtually impossible for someone to repay the debt incurred from five years of doctoral study when expected salaries after earning the degree are low. It is essential for the field to be able to aid in the support of doctoral study through Federal fellowships so that the debt incurred may be reasonably managed.

The II-C program of assistance to major research libraries should also be continued. U. S. research libraries are extraordinary national assets unmatched in any other country in the world. We have helped, with federal assistance, to maximize their value through describing and locating items in these collections. Now we need to maximize the ability of libraries to share by increasing access to the content of these collections through high-capacity computer networks and electronic formats (some of which may preserve the content as well as facilitate its use).

Our research libraries can share resources with surrounding communities. At my own institution, the library is linked electronically with seven library systems across the state. These include Hancock in the Upper Peninsula to Farmington and Lapeer in the south. These public libraries have access for their users to the extensive resources of the University of Michigan Library via

the state's MERIT network. M-Link is only a pilot funded by a foundation, but we are demonstrating how an investment to share resources can be leveraged.

Research Needs. I will close by speaking about the II-B research and demonstration program, and my colleagues will explore other programs in depth. To fully exploit the information technologies which are transforming organizations, an aggressive program of research will be required to enable us to use these technologies in an effective and efficient manner. At present, very little research money is available. This is unfortunate, because researchers in the library field bring a unique and all-too-rare user-oriented viewpoint to information science questions. Today, collaborative research is key. Most research questions transcend the boundaries of traditional disciplines. Library science researchers have much to contribute, but they must bring their share of funds to the table if they are to collaborate productively with colleagues in law, management, social sciences, engineering and computer science.

In FY 1986 the Department of Education commissioned (with II-B funds) a study to identify issues in library research. The result has been published in three volumes titled *Rethinking the Library in the Information Age* (GPO, 1988). Nearly 150 research questions in ten major issue areas were identified. A few examples are listed below:

- How do new social developments (information as a product, the commercialization of information) conflict with the character and organizing principles of the public library

system and the concept of access to information as a universal right?

- Is technology causing a "glut" of information without improving real access?
- How do the electronic technologies impact privacy and censorship? How do the ethics of the information keeper and public policy interact?
- How can libraries reach broader audiences (illiterate and low-literacy adults, the learning disabled, ethnic groups, age groups)? Are there model libraries or measures of success for reaching such groups?
- What is the correlation between library support and outcomes, such as university quality ratings, test scores, economic production, etc.?
- What should high schools (as the last place for formal education for many citizens) teach about the use of information resources and services?
- Where will libraries obtain the full text to back up what has been cited electronically? What is the optimal full text delivery?
- What criteria determine the long range value of information independent of its medium? Is valuable archival information falling through the preservation "net"? Who archives electronic information?
- Can expert systems and other technology handle some reference functions cost-effectively?

The Department of Education has been able to address very little of this well-developed research agenda because of lack of funding. For instance, in FY 1990, 45 applications were received requesting $3.7 million. However, only $285,000 was available and only 5 projects could be funded. Potential grantees requested 13 times more funding than was appropriated, and submitted 9 proposals for every one funded. Similar patterns apply every year since FY 87 when field-initiated proposals were reinstated after several years of contract-only projects. Examples of FY 90 projects such as assessing the information needs of rural Americans in relation to the rural public library (Clarion University of Pennsylvania) and assessing the impact of school library media centers on student achievement (Colorado Department of Education) indicate that the research agenda issues are being addressed. However, assistance is far too meager.

Since research priorities may change over time, ALA recommends that the statute require the Secretary to consult with organizations representing library and information science professionals in determining priorities for research and demonstration projects, as well as in determining areas of critical need in library education and training under HEA II-B.

Review Process. Reviewers for all title II programs must operate in isolation through a review-by-mail process. As a result, viewpoints and judgements of individual reviewers cannot be vetted by peers. The timeliness and quality of grant application evaluations would be improved by convening review panels in Washington, D.C. Department of Education program officers are

hampered in their ability to give consistent technical advice when they must deal with large numbers of reviewers by mail and phone. Each reviewer's travel, per diem, and honorarium should be paid.

Staffing. ALA recommends that the statute specify that title II programs be administered in the Department by appropriate experts in library technology, library education, and related fields. The 1986 reauthorization added such language for the new title II-D technology program. This provision was helpful, not only in enabling the library programs unit to recruit an individual with the appropriate library technology background, but in allowing recruitment at all. Within the Department, it is difficult to make the proper case for adequate and experienced staff when library programs are being recommended for elimination in the annual budget request. This situation justifies special Congressional attention to the staffing for library programs.

In conclusion, I commend the Subcommittee for its involvement of a wide variety of interested groups in the Higher Education Act reauthorization process, and I appreciate the opportunity to present the views of the American Library Association.

Mr. KILDEE. Thank you.
Professor Josey.

STATEMENT OF E.J. JOSEY, PROFESSOR, SCHOOL OF LIBRARY AND INFORMATION SCIENCE, UNIVERSITY OF PITTSBURGH

Mr. JOSEY. Mr. Chairman, subcommittee members, I am E.J. Josey, a member of the faculty of the School of Library and Information Science, University of Pittsburgh. I am a past president of the American Library Association. I am currently the chair of the ALA Legislation Committee, and I represent ALA today as well as the Association for Library and Information Science Education.

I am delighted to have this opportunity to appear before you today. My testimony will concentrate on issues related to the program under the Higher Education Act Title II-B, Section 222, currently called "Library Career Training."

ALA and ALISE recommend that this program be reauthorized and titled "Library Education and Human Resource Development." Despite the fact that the HEA Title II-B education component is currently funded at only $650,000, it is difficult to overestimate the importance of this program to the field of library and information science.

As Dr. Dougherty just said, we have had many accomplishments since this title was first funded in fiscal year 1966. More than 4,000 persons have received fellowships.

At the School of Library and Information Science, University of Pittsburgh, since 1966, Title II-B funds have supported 63 master's, 12 post-master's, and 83 doctoral students. The recipients of these fellowships have made outstanding contributions to the profession. In my statement you will find a list of these persons and their leadership roles in this profession.

I have provided you with an example of institutes held in fiscal year 1990 at the University of Southern Mississippi and at Montana State University that have provided librarians upgraded skills.

An analysis of the American Library Association's office, the library personnel resources, of degrees awarded indicated that, of the total, minorities receiving graduate degrees and certificates have never been more than 10 percent in the last 15 years. The average during the 1980s was 7.7 percent.

A study was done called "A Crisis in Librarianship"—in spite of disdain of that word, it is a crisis—and this is called "A Crisis in Librarianship: A Decline in the Number of Minorities Entering the Profession Since 1979." This was done by Dr. Lorene B. Brown of Atlanta University, and she showed clearly and unmistakably that the number of minority students receiving master's degrees from library schools dropped more than 40 percent between 1979 and 1984 because of the decreased funding of HEA.

At the University of Pittsburgh where I am the faculty member who recruits minorities, in my travels to the colleges and universities, I have been able to encourage students who have not previously considered careers in library and information science to consider studying in this field.

However, Mr. Chairman, one of the first questions that I'm asked is, what kind of grants are available to study library and information science? Robert H. Atwell, the president of the American Council on Education, described the problem we have in the recruitment of minorities when he said the following:

"With the shift in emphasis of Federal student aid from grants to loans over the past 10 years, more and more needy students are sharing limited grant dollars that fail to keep pace with the cost of education. Even though the number of borrowers under the Stafford Loan Program has quadrupled, many low-income students, especially those who belong to minority groups, are discouraged from attending college because of their reluctance or their inability to assume a heavy debt load."

There is a crisis in library education for the 550 graduate library school faculty in this country. We have discovered, from a recent study made by Fay Zipkowtiz and Elizabeth Futas of the University of Rhode Island, that more than half of this faculty will be retiring before the year 2000.

While there is a need for minority Ph.D.'s in this field; nevertheless, we must underscore this fact once more, that there has been a decline in the number of minorities receiving master's degree in library science. Unless minorities get into the education pipeline, there is very little chance that we will have minority candidates to work in the Nation's libraries or to enter Ph.D. programs. The Ph.D. is the union card for the professorate.

Don Stewart, the president of the College Board, reminds us that "the smaller the number of blacks, Hispanics, and Native Americans going into the professorate, the harder it is to get these groups into higher education as students, which lowers the potential pool from which to recruit new professors, and so it goes."

As we move toward the close of this century, we are confident that the library schools of our Nation can meet the challenge of educating new professionals to overcome the shortage of librarians, especially minority librarians, library school faculty, children's librarians, library researchers, and information specialists to work in the new era of electronic networks such as the NREN that Dr. Dougherty mentioned.

To accomplish this goal, it is essential, we believe, that the Higher Education Act Title II–B be reauthorized and appropriately funded.

Thank you, Mr. Chairman and members of the subcommittee, for permitting me to share our views today.

[The prepared statement of E.J. Josey follows:]

Statement of
E. J. Josey, Professor
School of Library and Information Science
University of Pittsburgh

before the
Subcommittee on Postsecondary Education
House Committee on Education and Labor

on
Reauthorization of the Higher Education Act

April 16, 1991

Mr. Chairman, Subcommittee members, I am E. J. Josey, a member of the faculty of the School of Library and Information Science, University of Pittsburgh. I am a Past President of the American Library Association. I am currently Chair of the ALA Legislation Committee, and I represent ALA today, as well as the Association for Library and Information Science Education. I am delighted to have the opportunity to appear before you today.

My testimony will concentrate on issues related to the program under the Higher Education Act Title II-B section 222, currently headed "Library Career Training." ALA and ALISE recommend that this program be reauthorized and titled "Library Education and Human Resource Development." Despite the fact that the HEA II-B education component is currently funded at only $650,000, it is difficult to overestimate the importance of this program to the field of library and information science. I will discuss what this program has accomplished, as well as why it is needed more than ever because of a shortage of librarians and a growing crisis in library education.

Accomplishments. Since II-B was first funded in fiscal year 1966, 4,336 persons have received fellowships. The majority of

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these (65 percent) received Master's degrees (2,829), while 26 percent (1,111) received doctoral degrees. The remainder consisted of traineeships, or associate, bachelor's or post-master's level fellowships. In addition, another 16,630 persons received training in 439 short-term library institutes. All of this was accomplished with the modest sum of $52,078,627 over 25 years, or just over $2 million per year. Funding has ranged from a high of $8,250,000 in FY 1968 to '69 to a low of $472,666 in FY '89. Funding remained under $1 million all through the 1980s, a consequence of the Administration's zero budgets for library programs in most of those years.

Grants are awarded on a competitive basis to institutions of higher education and library organizations or agencies, which recruit students for degree programs or traineeships or institutes. Interested students apply to the grantee institution; fellows or institute participants are not required to pay tuition and fees. Current stipends for fellowship recipients (for the academic year and summer) are $5,400 for the master's level, and $7,400 for the doctoral level. These levels are now inadequate to cover true expenses. The grantee institution receives an amount equal to the fellowship stipend to cover the cost of the education and the cost of waiving tuition and fees. The cost of institutes varies.

How can such a small program have much impact? Because it is almost the only such assistance available, and because interested and talented individuals require extra assistance to acquire the high level of knowledge and skills librarianship requires but for which librarians are rarely paid well. Librarianship is by nature

rather interdisciplinary. It requires a core of knowledge (organization of knowledge and information transfer) and skills (analytical, organizational, and communicative) acquired through a master's degree, and various specializations or additional study. These other requirements can range from specializations such as children's literature or government documents, or law or medical librarianship, to fluency in foreign languages, advanced study in public administration, computer and communication techniques, social services and community outreach, or various subject specialties.

At the School of Library and Information Science, University of Pittsburgh, since 1966, Title II-B funds have supported 63 master's, 12 post-master's, and 83 doctoral students. Recipients of these fellowships have made outstanding contributions to the profession. Three faculty members of our school alone were all recipients of Title II-B doctoral fellowships--Dr. Ellen Detlefsen (Columbia), Dr. Margaret Kimmel, Department Chair (Pittsburgh), and Dr. Blanche Woolls (Indiana). Other outstanding library leaders who completed the Pittsburgh Ph.D. Program as a result of having a Title II-B fellowship include Dr. Brooke Sheldon, Dean, University of Texas-Austin; Dr. Robert Steuart, Dean, Simmons College; Dr. Jo Ann Rogers, Professor, University of Kentucky; Dr. Ann Carlson Weeks, Executive Director, American Association of School Librarians, and others. Of minorities, Dr. Elizabeth Howard, Associate Professor, West Virginia University; Dr. Lou Helen Sanders, Acting Dean of Libraries, Jackson State University; Dr. Arthur Gunn, Chief Librarian, Hunter College, City University of

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New York; and Dr. Marva L. DeLoach, Deputy Director of the Oakland (California) Public Library; and Dr. George Grant, Director of Libraries, Rollins College, Florida. Most of the Title II-B master's graduates are working in key positions in public, school, academic or special libraries. Without the Title II-B fellowships, many minority master's graduates would not have been able to attend a graduate library school program.

Two FY '90 examples of institutes under II-B illustrate projects which result in improved instruction for K-12 students, and for which other sources of support are practically nonexistent. The first was called "Information for Tomorrow," held at the University of Southern Mississippi School of Library Science in Hattiesburg to provide school library media specialists with advanced information retrieval skills. The 60 participants included about 20 school administrators and teachers, and the project developed a team concept with principals, teachers and library media specialists working together to provide the best instructional research and instruction to students. The short-term institute resulted in increased use of technology in school media centers to offset gaps created by isolation and limited budgets. It also established a trained group of library media specialists to provide additional workshops.

Another institute, held at Montana State University in Bozeman, trained rural school library media specialists to use microcomputers for managing, technical services, and instruction in the school media centers. The project assisted in establishing a network through electronic bulletin boards and Montana State

University, and prepared rural teachers, school library media specialists, and administrators in public schools with 500 or fewer students to use teleconferencing and teledistance services. This project also overcame distance and isolation to provide better prepared instructional personnel to help students learn.

Shortages of Librarians. Using U. S. Bureau of the Census figures, James Matarazzo has estimated that of the 183,539 librarians in the United States in 1980, 70,694 or 39 percent will be 65 years of age or older by the year 2000. (His analysis, "Recruitment: The Way Ahead," appears in *Recruiting, Educating, and Training Cataloging Librarians*, edited by Sheila S. Intner and Janet Swan Hill, New York: Greenwood Press, 1989.)

At the request of libraries developing and updating their affirmative action plans, the data published annually by the Association for Library and Information Science Education is analyzed each year by the American Library Association Office for Library Personnel Resources. The 55 accredited U.S. master's programs and 15 doctoral programs reported on the ethnic composition of students receiving degrees in 1988-89. Of the 3,522 persons who received master's degrees, 161 were black (4.6 percent), 96 were Asian/Pacific Islander (2.7 percent), 67 were Hispanic (1.9 percent), and 14 were American Indian/Alaskan Native (0.4 percent). Of the 53 persons receiving doctoral degrees, 4 were black (7.5 percent), 2 were Asian/Pacific Islander (3.8 percent), none were Hispanic, and none were American Indian/Alaskan Native.

An analysis by ALA's Office for Library Personnel Resources of degrees awarded indicates that total minorities receiving graduate degrees and certificates have never been more than 10 percent in the last 15 years; the average during the 1980s was 7.7 percent. A study entitled "A Crisis in Librarianship: The Decline in the Number of Minorities Entering the Profession Since 1979," by Dr. Lorene B. Brown, Atlanta University, showed that the number of minority students receiving master's degrees from library schools dropped more than 40 percent between 1979 and 1984 because of the decreased funds for HEA II-B.

Professional staffing in public and academic libraries is only 6.1 percent black, 3.4 percent Asian, 1.8 percent Hispanic and 0.2 percent Native American, according to the latest available data (*Academic and Public Librarians: Data by Race, Ethnicity and Sex*, Chicago: ALA, 1986). By the year 2000, one of every three Americans will be minorities. Therefore, with the foregoing demographics, it appears that we must increase our efforts related to the recruitment and education of minority persons for careers in the nation's libraries.

Marva DeLoach, in her dissertation (*The Higher Education Act of 1965, Title II-B: The Fellowships/Traineeships for Training in Library and Information Science Program: Its Impact on Minority Recruitment in Library and Information Science Education*, School of Library and Information Science Education, University of Pittsburgh, 1980) examined existing data and sought the opinions of deans and directors of library schools. Both indicated definite correlations between the availability of HEA II-B fellowships and

the number of minority graduates. This correlation continues to exist in 1991.

At Pittsburgh, I am the faculty member who recruits minorities. In my travels to predominantly black colleges and universities, I have been able to encourage students who have not previously considered careers in library and information science to consider study in this field. However, one of the first questions that I am asked is what kind of grants are available to study library and information science. Our grants have been rather limited at SLIS, for under HEA Title II-B, this current year, 1990-91, SLIS has two fellowships, one Ph.D. and one MLS. There are three state library scholarship recipients. In short, we only have five grants, and this is hardly enough incentive to encourage students to pursue graduate study. However, students have agreed to come if we could provide a combination of a part-time GSA and they are able to obtain loans.

Robert H. Atwell, the President of the American Council on Education, described the problem we have in the recruitment of minorities when he said the following:

> With the shift and emphasis of federal student aid from grants to loans over the past ten years, more and more needy students are sharing limited grant dollars that fail to keep pace with the cost of education. Even though the number of borrowers under the Stafford Loan Program has quadrupled, many low income students, especially those who belong to minority groups, are

discouraged from attending college because of their reluctance or inability to assume a heavy debt load.

The scenario described by Dr. Atwell is compounded when students consider that a graduate degree is required to work as a professional in libraries, which means attending college or university for a fifth year. Since the MLS is a post-baccalaureate degree, many minority students who have obtained student loans during their entire four years of college are rather reluctant to assume another burden of debt, and therefore, our supply of minority librarians will continue to be limited. There is a dire need for additional funding under HEA Title II-B to provide minorities the opportunity to become librarians and serve in the nation's libraries.

One of my colleagues at Texas Woman's University said the School of Library and Information Studies is "particularly proud of our Hispanic graduates who clearly have become role models for younger professionals, and for the clientele they serve. In a state which will be more than 50% Hispanic in a very few years, these opportunities to move promising minorities into professional leadership roles are absolutely critical."

At the University of Wisconsin-Madison, an African American librarian/professor cites her own receipt of scholarships and fellowships as making a difference in charting her career path. She added: "Today, even more minority librarians are needed. We can serve as models for all our youth by positively representing the cultural diversity that exists in the United States. Of even

more importance, librarians can open the door to learning, and impact poverty and illiteracy."

For the last five years, the placement service at ALA annual and midwinter conferences has had more job openings listed for librarians than job seekers (including both those who appeared in person and those who sent resumes). Areas of highest discrepancy include openings for librarians in children's and young adult services, school library media specialists, and technical services (acquisitions, cataloging, classification, etc.).

School library media specialists are expected to hold a teaching degree and have a master's degree or additional course work in library and information science, management, education, media, communications, and technology. Such specialists are in short supply, according to data compiled in 1990 by the ALA Office for Library Personnel Resources and ALA's American Association of School Librarians. The shortages are because of a growing number of retirements, an increase in certification requirements and upgrading of standards for staffing, and population growth in some parts of the country.

Of the graduates from accredited master's programs, only about 15-19 percent go into school library positions. However, many states report that close to half of their school library media specialists will retire within ten years, including data from California, Illinois, Kentucky, Maine, New Jersey, and South Carolina. Georgia is experiencing a cycle of retirements, resulting in the need to issue probationary certificates because of the lack of qualified librarians.

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At the same time the potential pool of school library candidates is shrinking, states are increasing certification requirements and upgrading state standards for staffing. Such reports have come from Alabama, Iowa, Maryland, Mississippi, New Hampshire, Tennessee, and Utah. Population growth and the building of new schools are contributing to shortages in Florida, Nevada, New Jersey and Washington.

State departments of education reported shortages of school library media specialists in 1990 in Alaska, Connecticut, Florida, Georgia, Maine, Maryland, Mississippi, New Jersey, New York, North Carolina, Oklahoma, Rhode Island, Washington, Wisconsin, and the District of Columbia. Kansas, Kentucky, Montana, and West Virginia report shortages in rural areas. A 1987 report, *The Crisis in California School Libraries*, by the California State Department of Education, found only 32 percent of California school libraries were staffed by a state-certified librarian. The South Carolina legislature has declared that school library media specialists, along with science and math teachers, constitute a critical teaching need area.

Crisis in Library Education. Of the approximately 550 graduate library school faculty in this country, about half will have retired by the year 2000, according to a recently completed study (*Faculty Replacements in Accredited Programs in Library Schools*, by Fay Zipkowitz and Elizabeth Futas of the University of Rhode Island Graduate School of Library and Information Studies, 1991). In addition, over 60 percent believe that they will leave teaching <u>before</u> retirement.

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Jane Robbins, Dean of the School of Library and Information Studies at the University of Wisconsin-Madison, has analyzed the data from the *Library and Information Science Education Statistical Report, 1989* (Timothy Sineath, Ed., Association of Library and Information Science Education, Sarasota, Florida, 1989). In the fall of 1988, 295 doctoral students were enrolled, the majority in librarianship or information science, but some in cognate fields. Of the 295, 169 were foreign, leaving 126 in the probable pool for faculty of U. S. and Canadian schools. An assumed completion rate of 75 percent (which is on the generous side) leaves 94 available doctorates. Generally, over half of those who receive the doctorate go into library administration, not teaching. Assuming that 48 percent of the 94 would be interested in library education, 45 persons would be looking for a teaching position. In fall 1988, the accredited graduate library education programs had 56 appointments to fill; thus, there are and will be more slots than people to fill them. Once again I would like to indicate that the number of minorities receiving the doctorate continues to be dismally small, as evidenced by the fact that only 4 blacks received the doctoral degree in library science in 1989, 2 Asians, no Hispanics, and no Native Americans.

While there is a need for minority Ph.Ds in the field, nevertheless, we must underscore the fact once more that there has been a decline in the numbers of minorities receiving master's degrees in library science. Unless minorities get into the education pipeline, there is very little chance that we will have

minority candidates to work in the nation's libraries or to enter Ph.D. programs. The Ph.D. is the union card for the professoriate.

Donald M. Stewart, President of the College Board, reminds us (in "Overcoming the Barriers to Successful Participation by Minorities," *The Review of Higher Education*, 11 no. 4, Summer 1988: 334) that "the smaller the number of blacks, Hispanics, and Native Americans going into the professoriate, the harder it is to get these groups into higher education as students, which lowers the potential pool from which to recruit new professors, and so it goes."

As we move toward the close of this century, we are confident that the Library and Information Science Schools in the country can meet the challenge of educating new professionals to overcome the shortage of librarians, especially minority librarians, library school faculty, library researchers, children's librarians, and information specialists to work in the new era of electronic networked information such as the proposed National Research and Education Network. To accomplish this goal, it is essential that the Higher Education Act Title II-B be reauthorized and appropriately funded.

Thank you, Mr. Chairman and members of the Subcommittee, for permitting me to share our views with you today.

Mr. KILDEE. Thank you very much.

The Chair notes that the panel has been joined by Congressman Payne of New Jersey, and by Congresswoman Susan Molinari from New York, and by Congressman Gunderson from Wisconsin.

Mr. Davis.

STATEMENT OF HIRAM L. DAVIS, DIRECTOR OF LIBRARIES, MICHIGAN STATE UNIVERSITY

Mr. DAVIS. Mr. Chairman, committee members, I am Hiram Davis, Director of Libraries at that pioneer and premier land grant institution in the country, Michigan State University.

I am appearing today on behalf of the Association of Research Libraries and the American Library Association. I am a member of the ARL project on cultural diversity in research libraries and chair of the ACRL Government Relations Committee.

I am here today to support the reauthorization of Title II programs of the Higher Education Act of 1965 and, in particular, to present to you recommendations for the continuation and enhancement of the Strengthening Research Library Resources Program known as Title II-C.

Mr. Chairman, ARL and ALA have jointly submitted recommendations for the Title II programs as well as for other titles of interest to research libraries, and I support the statements of the other witnesses this morning.

Few areas of scholarly researched have been untouched by the benefits of Title II-C, and the library community has utilized the program to extend its commitment to resource sharing and exploit new technologies for the ultimate good of library users throughout the Nation.

As will be evident throughout my statement, the extraordinary success of the program is due to the extensive cooperation and resource sharing between research libraries to achieve enhanced access for scholars and can be characterized as utilizing new technologies to realize this improved accessibility.

With the explosive growth of knowledge, there will be, more than ever, a need to identify and provide access to both national as well as international information resources. It will be of critical importance in the years ahead to build upon the many successes of the Title II-C program and to explore new opportunities for enhanced access and delivery of information resources utilizing electronic technologies.

The change that we propose in the Title II program is indicative, improving access to research library resources. In brief, we recommend that Title II-C be reauthorized, and we offer three specific recommendations: One, the current language of Title II-C be retained without substantive change; two, the reauthorization level be increased to $25 million for each of the 4 succeeding years; and, three, there will be increased emphasis on the utilization of technologies to achieve enhanced access to a diverse array of unique collections and information resources.

To date, over $75 million has been distributed to the Nation's research libraries since the first Title II-C were awarded in 1978, with participation by 118 institutions through 427 grants. Grants

have been awarded to institutions in 44 States plus the District of Columbia since the program's inception.

Two years ago, as Professor Dougherty has mentioned, ARL commissioned a study to review the Title II-C program after 10 years of operation. This study illustrates how the programs have successfully contributed to the advancement of scholarship by strengthening the collections of the Nation's largest libraries and by facilitating the sharing of resources among those libraries and between them and other academic and public libraries.

Professor Dougherty has already mentioned the particular project that occurred in Michigan between Michigan State University and the University of Michigan and Wayne State that resulted in over 150,000 serial titles in the sciences, social sciences, and humanities into standard formats.

Another example that may be of particular interest to the subcommittee was a recent request for materials from the Cutter Pamphlet Collection at the Library of the State Historical Society of Wisconsin. Several of these pamphlets were requested by the legal office of the U.S. Senate in conjunction with preparation of a brief for a case concerning flag desecration before the Supreme Court. Access to the collection was possible only because of the Title II-C funds.

As the subcommittee is well aware, the preservation problem facing the Nation is of a daunting magnitude. Preservation projects funded by Title II-C have emphasized the microfilming of deteriorating books and manuscripts. The funds available in support of the preservation efforts have made a significant impact in saving such materials.

Finally, in the area of collection development, research materials purchased with Title II-C funds have spanned a wide range of subjects in the humanities, the sciences, and the social sciences.

Mr. Chairman, I would like to focus the remainder of my remarks on new directions that we must take in the years ahead to improve access for the researcher to the vast array of resources and to enrich and promote scholarship. There are a number of new directions in each of these areas that I've mentioned this morning that are in my written report.

Three areas that we need to focus on internationally: There are 1,000 books that are being published daily; 9,600 different periodicals are published annually; and the total of print knowledge is doubling every 8 years.

As you are well aware, no library or research institution can afford to collect, preserve, or make accessible the expanding volume of information. Network application that Professor Dougherty has already talked about, in terms of NREN, will take on national and international significance.

This modest funding investment is warranted and builds upon local, State, and national programs. It will also permit access to those resource materials and collections generally unaccessible but of extreme research value, including photographs, archives, satellite data, artifacts, and more.

Finally, we propose a change to Title VI, international and foreign language studies. With other parts of the higher education community, we have developed joint language in response to the

pressing need to revitalize and fund this provision. It is critical that we begin to identify, collect, and provide access to the foreign research and information resources at a time of unprecedented challenge in the international order.

The combination of rising inflation and dollar devaluation has resulted in rapidly increasing publication costs. When coupled with budget cuts in libraries, there is a marked decrease in acquisition of foreign research and information resources. We look for your support in funding this important provision.

In closing, Mr. Chairman, I would like to emphasize, as we move into the information age, we must equip our libraries and scholars with needed information resources and the tools with which to identify these resources. The Title II-C program is an essential part of our information infrastructure and one which we must strengthen and continue.

The statute has encouraged the development of new and innovative ways to share resources among and between research libraries and has permitted research libraries to become points of access to information, in addition to acquiring, preserving, and organizing information. This direction must be encouraged, strengthened, and supported.

Thank you very much for the opportunity to share these comments.

[The prepared statement of Hiram L. Davis follows:]

ASSOCIATION OF RESEARCH LIBRARIES

Statement of

Hiram L. Davis
Director of Libraries, Michigan State University

before the

Subcommittee on Postsecondary Education
House Committee on Education and Labor

on
Reauthorization of the Higher Education Act

April 16, 1991

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Mr. Chairman, Committee Members, I am Hiram L. Davis, Director of Libraries at Michigan State University. I am appearing today on behalf of the Association of Research Libraries and the American Library Association. ARL is an association of 119 major research libraries in North America. The resources of the membership of ARL in the aggregate includes 356 million volumes and $1.9 billion dollars annual expenditures. ALA is a nonprofit educational organization of 52,000 librarians, library trustees, and other friends of libraries. I am a member of the ARL Project on Cultural Diversity in Research Libraries and chair of the ACRL Government Relations Committee.

I am here today to support the reauthorization of the Title II programs of the Higher Education Act of 1965, and in particular, to present to you recommendations for the continuation and enhancement of the Strengthening Research Library Resources Program known as Title II-C. Mr. Chairman, ARL and ALA have jointly submitted recommendations for all of the Title II programs as well as for other Titles of interest to research libraries, and I support of the statements of the other witnesses this morning.

In 1976, Congress established the Strengthening Research Library Resources Program, Title II-C of the Higher Education Act of 1965 and initiated a program which has resulted in hundreds of thousands of research materials, in all subjects and formats, being made accessible to scholars in institutions large and small. Few areas of scholarly research have been untouched by the benefits of Title II-C, and the library community has utilized the program to extend its commitment to resource sharing and to exploit new technologies for the ultimate good of library users throughout the Nation. As will be evident throughout my statement, the extraordinary success of the program is due to extensive cooperation and resource sharing between research libraries to achieve enhanced access for scholars and can be characterized as utilizing new approaches and technologies to realize this improved accessibility.

With the explosive growth of knowledge, there will be more than ever a need to identify and provide access to both national as well as international information resources. It will be of critical importance in the years ahead to build upon the many successes of the Title II-C program and to explore new opportunities for enhanced access and delivery of information resources utilizing electronic technologies. In brief, we recommend that Title II-C be reauthorized and that:

- the current language of Title II-C be retained without substantive change;
- the authorization level be increased to $25,000,000 for each of the four succeeding years; and
- there be an increased emphasis on the utilization of technologies to achieve enhanced access to a diverse array of unique collections and information resources.

Over $75 million has been distributed to the nation's research libraries since the first Title II-C grants were awarded in 1978 with participation by 118 institutions through 427 grants. Grants have been awarded to institutions in forty-four states plus the District of Columbia since the program's inception. These grants have resulted in significant benefits to researchers and scholars through the:

•the acquisition of specialized or rare material to enhance or complete a library collection which may be a focus for national or international scholarly research;

•the encouragement and funding of pilot projects to develop new methods to provide bibliographic access, enhance collections, and meet preservation needs.

•the creation of machine-readable bibliographic records made available through databases which are accessible by scholars at institutions nationwide;

•the preservation of collections for scholarly use;

•the creation of bibliographic records for major microform series, enabling scholars throughout the country to access individual titles within a microform set; and

Two years ago, ARL commissioned a study to review the Title II-C program after ten years of funding. I have with me today an Executive Summary of this report, *"The Higher Education Act, Title II-C Program: A Ten Year Profile and An Assessment of the Program's Effects Upon the Nation's Scholarship."* The report documents the vast array of projects only possible because of federal funding. The study illustrates how the program has successfully contributed to the advancement of scholarship by strengthening the collections of the nation's largest libraries and by facilitating the sharing of resources among those libraries and between them and other academic and public libraries.

Grants have been made in three program areas: bibliographic access (control), preservation, and collection development. Although grants have been made in all three areas, emphasis has been placed on bibliographic access projects. Between 1978 and 1988, bibliographic access projects represented $49,949,226 or 73% of the awards, with $13,219,195 or 21% devoted to preservation projects, and $4,069,843 or 6% towards acquisition projects.

Bibliographic Access

The range and diversity of **bibliographic access projects** funded provide clear illustration of the research library community's emphasis on resource sharing while enabling scholars and researchers access to the resources of libraries throughout the country. These projects have focused on creating original records or converting manually-produced records to machine-readable form, and those records are often contributed to OCLC and RLIN, the nation's principal automated bibliographic utilities.

Without the stimulus of Title II-C projects and funding, many of these materials would not have been included in these national bibliographic databases due to both the size of the collections and cost of work entailed.

Although bibliographic control projects funded by Title II-C have concentrated on providing access to printed books, there consistently have been a large number of projects to catalog or otherwise make accessible important research materials in non-book formats: government documents, manuscripts, sheet music and scores, sheet maps and maps in books, printed ephemera, phonograph records, photographs, television scripts and commercials, playbills, scrapbooks, oral history tapes, films, broadsides, trade catalogs, scientific specimens, and machine-readable data files. Materials in all modern European languages as well as many from the near, middle and far east have been included.

A considerable number of Title II-C projects have taken advantage of new technological developments or national programs designed to share bibliographic data. Such projects have utilized RLG's Chinese, Japanese and Korean (CJK) program, the Name Authority Cooperative Project (NACO) and the Cooperative Online Serials Program (CONSER). Other bibliographic access projects have planned and implemented local or regional online bibliographic access systems, and established a document delivery system. Examples include:

•conversion of 150,000 serial titles in the sciences, social sciences, and humanities to standard format by the three largest libraries in Michigan -- the University of Michigan, Wayne State University, and Michigan State University -- resulting in coordination of serials procedures and machine-readable databases in standard formats for local use (e.g. local union lists, online catalogs, and circulation records systems.) The funding also resulted in the creation of the Michigan Union List.

•processing, some conservation measures, and full machine-readable cataloging records into OCLC for a Cutter Pamphlet collection of unbound emphera (1854-1966) at the Library of the State Historical Society of Wisconsin. Several of these pamphlets, now accessible via OCLC and the State Library, were requested by the legal office of the U.S. Senate in conjunction with preparation of a brief for a case concerning flag desecration before the U.S. Supreme Court.

•creation of bibliographic description and multiple access points leading to the provision of online access via RLIN to all titles in Early American Imprints: Second Series -- a major asset to the work of sociologists, political scientists, historians, philosophers, students of American culture and thought, and religious scholars. Through RLIN, the over 34,000 records are shared with several

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hundred libraries by using the database for bibliographic searching, cataloging, collection development, and interlibrary loan.

•cataloging of the Fox Movietonenews Collections, one of the world's largest non-print news service, at the University of South Carolina in a manner that the individual news stories were accessible via an online database to scholars and researchers.

New Directions: As these examples demonstrate, Title II-C has prompted the experimentation and utilization of technologies to promote enhanced access. This comes at a time when the growth of information is explosive -- internationally 1,000 books are published daily, nationally, 9,600 different periodicals are published annually, and the total of all printed knowledge doubles every eight years. This rapid expansion of knowledge, increasingly in electronic formats, requires a new response and an emphasis upon experimentation.

Network applications today primarily focus on the provision of access to resources such as books, journals, and online files. But the technologies and new high-capacity networks such as the proposed National Research and Education Network or NREN provide us with exciting opportunities to organize and make accessible these resources in new and different ways. It will also permit access to those research materials and collections generally unaccessible but of extreme research value including photographs, satellite data, archival data, videos, and movies, sound recordings, slides of paintings and other artifacts, and more. What will be needed is bibliographic access, directories, and related projects to identify, organize, and provide access to these important resources. Funds are needed to:

•identify, allow for, and encourage access to unique scholarly and research resources, many times in digital formats, located on campuses but not within the administrative control of the library;

•convert print and graphic materials to machine-readable format and promote those projects that encourage the widest possible access;

•encourage the development of improved methods of cataloging and indexing, particularly important in light of our growing dependence upon networks as the means to both identify and convey information resources.

Preservation

For the first 10 years of the Program, Title II-C grants were the major source of funding for **preservation** efforts throughout the Nation. As the Subcommittee is well aware, the preservation problem facing the Nation is of a daunting magnitude. Although preservation grants only constituted 21% of the II-C funding, the benefits from bibliographic control projects such as databases of machine-

readable records resulted in a more efficient and effective preservation microfilming program. Preservation projects funded by Title II-C have emphasized the microfilming of deteriorating books and manuscripts. There have also been a considerable number of projects involving the preservation of photographs, of sound recordings, and a variety of item-specific conservation activities. In several cases, conservation equipment such as photographic and microfilm laboratory equipment, paper conservation and hand binding equipment has been purchased with Title II-C funds. Projects which have concentrated on conservation of rare items have utilized a range of current preservation techniques, from simple cleaning and repair to rebinding, encapsulation, remounting, fumigating and deacidification. Books, manuscripts, drawings, prints, architectural plans, photographs, posters, ephemera, and scrapbooks have been the objects of preservation projects.

Title II-C preservation grants to the Boston Public Library are illustrative of the importance of this source of funding and of the value to the research community. The Library has concentrated on the microfilming of deteriorating research materials including:

•a twenty-year effort to preserve 300 years of Massachusetts newspapers involving over 10,000 reels of microfilm with the original newspapers wrapped in acid-free paper and placed in storage.

•the bibliographic results of the project accessible via national research tools including the Newspapers on Microfilm-United States and the National Register of Microform Masters.

The preservation activities of the New York Public Library have permitted a variety of preservation activities including:

•the filming and artifactual preservation of the nationally significant World War I Collections, a comprehensive resource consisting of over 35,000 items; data was also entered into RLIN to share bibliographic information and make the collection better known and more widely available.

•the conservation, restoration, cataloging, and enhancement of the Slavonic Division's collection of imperial Russian political, social, and literary journals.

New directions: There is a continued need to maintain this focus in the program while exploring new preservation technologies such as a project underway at Cornell University. Cornell University, Xerox Corporation, and the Commission on Preservation and Access are cooperating in a project to test the applicability of digital technology to the preservation of brittle books. "Digital technology offers the potential of combining the storage and duplication characteristics of microfilm and the usability of paper preservation photocopying together with the transmission and distribution capabilities not available with film or paper." [1] These types of collaborations should be supported and:

•encourage projects to investigate preservation issues related to new information technologies;

•fund new experimental preservation technologies and programs.

Collection Development

Finally, in the area collection development research materials purchased with Title II-C funds have spanned a wide range of subjects in the humanities, sciences and social sciences. Acquisitions in art, theater, music, mathematics, geology, poetry, philosophy, anthropology, musicology, folklore, aquaculture, economics, and European jurisprudence provide some indication of the diversity of purchases made through Title II-C grants. Area studies and foreign language materials have frequently been acquired with emphasis on Soviet and East European studies, Latin America, and the Far East. In addition, a few projects have concentrated on Africa and the Pacific Islands. Some projects have focused on particular nations, such as Iran, Italy, Mexico, Costa Rica and India.

Because of the Title II-C Program's emphasis on advanced research, materials acquired with federal funds have tended to be unique and often rare items found in few, if any, collections in the United States. Both current and retrospective research materials purchased with program funds most often have been out of the mainstream of material routinely acquired through normal library acquisitions policies and procedures. In addition to specialized printed materials, Title II-C funds have enabled libraries to purchase microform editions and facsimiles, sometimes especially commissioned, of rare materials; foreign doctoral dissertations on a wide variety of subjects; rare books; manuscripts and archival collections; foreign newspapers; foreign government documents; and rare musical recordings. Title II-C funds have:

•strengthened the collections of Italian history, Slavic mathematical and geological serials, legal history and Latin American maps at the University of Illinois with national and international significance as well as making these collections available via interlibrary loan and bibliographic information available via OCLC. In complementing other grants, the University in 1981 and 1982 acquired 1,500 mathematical monographs, and created and entered bibliographic data into OCLC for over 27,000 monographs and 1,400 serials.

•promoted cooperative collection development of current and retrospective research materials at Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University that built upon each library's distinctive subject and area strengths (e.g. economics and literature of the Soviet Union and Poland, Eastern European collections, and a microform collection of the U.S. Patents from 1946-65).

•acquisition, preservation, and accessibility of a large body of Canadian government documents pertaining to acid rain that resulted in University of Vermont to house the most comprehensive collection on acid rain the United States. Information is available via OCLC and AGRICOLA as well

as through conventional interlibrary loan. In addition, a grant also funded a CD-ROM product to both disseminate and preserve the documentation.

New directions: No one library or research institution can afford to collect nor make accessible the expanding body of information. Instead, programs such as Title II-C promote joint acquisition and building upon collection strengths of institutions. Additional federal investment is warranted in this arena to build upon local, state, and other national programs . For example, funds are needed to:

- expand the program to include acquisition or access to large data bases and data sets ;
- encourage more inter-institutional cooperation and collection development between research libraries and non-library repositories of research information including museums, and scientific and technical information resources.

Of a related nature, is a proposed change to Title VI, International and Foreign Language Studies, Part A, Section 607. We have worked closely with other parts of the higher community to develop joint language in response to the pressing need to revitalize and fund this provision. It is critical that we begin to identify, collect, and provide access to the foreign research and information resources at a time of unprecedented challenge in the international order. The combination of rising inflation and dollar devaluation has resulted in rapidly increasing publications costs. When coupled with budget cuts in libraries, there is a marked decrease in acquisition of foreign research and information resources. We look for your support in funding this important provision.

In closing Mr. Chairman, Title II-C has permitted scholars and researchers throughout the country to benefit from the collections and resources housed at major research institutions. Title II-C funds have also helped to preserve many of these unique and significant collections. As we as a Nation move more into the information age, we must equip our libraries and scholars with needed information resources and the tools with which to identify these resources. The Title II-C program is an essential part of our information infrastructure and one which we must strengthen and continue. The statute has encouraged the development of new and innovative ways to share resources among and between research libraries and has permitted research libraries to become points of access to information in addition to acquiring, preserving, and organizing information. This direction must be encouraged, strengthened, and supported.

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[1]Anne Kenney, "Cornell/Xerox Begin Joint Study in Digital Preservation," *ARL 155*, March 22, 1991, p. 5.

Mr. KILDEE. Thank you, Mr. Davis.
Ms. Albright.

STATEMENT OF ELAINE ALBRIGHT, DIRECTOR, FOLGER LIBRARY, UNIVERSITY OF MAINE

Ms. ALBRIGHT. Mr. Chairman and committee, my name is Elaine Albright. I am here wearing three hats—now four—I'll confess to a fourth. I am chair of the Legislation and Regulation Committee for the Library and Information Technology Association. I am the chair of the ALA Legislative Assembly. I am Director of Libraries at the University of Maine.

And I would like to admit here that I am also a U of M graduate. It took many years, though, 17 in Illinois, to realize that U of M didn't mean the University of Maine. And, of course, I am a graduate of the University of Maine. So I thought I would add that with my present colleagues.

I am glad to be here, now that I've said I'm from Maine, for two reasons: one, because it's spring here, and the snow has just barely melted in Maine; and, second, because I'm addressing a committee that has done so much already to influence the future of libraries and I think the viability of libraries in this country.

I would like to talk specifically about Title II-D, which we would like to call Academic Libraries in the Electronic Network Environment. This act, passed in 1986 and funded for the first time in 1988, has been very effective so far, even though it is a very new act. It shows the current potential for technology and networking growth in libraries and institutions of higher education.

Since its first year of funding, over 1,000 requests for $120 million has been requested. So far, $14 million has been awarded to 138 requesting institutional libraries. As you can see, the need for library interest in technology and growth far exceeds the available money and resources. Nonetheless, institutions in 36 States have benefitted, plus the District of Columbia and Puerto Rico.

So many of the States have already received grants in this short period of time. This is an impressive reality, in light of the fact that each grant awarded reached well beyond any one State and any one institution. In 1986, for instance, 4 to 137 libraries were affected for each grant awarded. It influenced the operations of an additional 127 libraries. So you can see the statistics just skim the surface.

HEA Title II-D is awarded in four parts. Networking grants allow libraries to participate in resource-sharing grants by providing technological equipment to connect national, regional, State, and local networks. Recently, the University of Detroit and Oakland Community College in Bloomfield Hills, Michigan, received grants to participate in the Detroit area library networking of 12 library systems.

A program to Montana State University allowed for statewide dial-up access to one of the State's few research libraries.

The second part, the combination grants, are designed to establish and strengthen joint use of facilities, resources, and equipment. Recently, the network of Alabama academic libraries, a consortium of 18 of the State's academic institutions, received a grant to share

architecture, engineering, and veterinary medicine resources for the State. As you know, those are some of the most expensive resources available to libraries. So the sharing really has saved that State quite a substantial amount of money.

The third part of the grant is services to institutions, and they are designed to establish, develop, or expand library projects and programs and information services. Pittsburgh Regional Library Center received a grant to extend its successful microcomputer and OCLC training programs to member libraries serving institutions in West Virginia. As you know, that is a very poor and needy state, so to reach beyond one's State boundaries is very important. That program was so successful that it was expanded to Western Maryland and other libraries in Pennsylvania.

The fourth part of this grant, research and development grants, are designed to meet specialized regional or national needs of library users, using up-to-date technology to enhance library services. An example of this, and one I'm most excited about, actually, has gone to the North Carolina State University/Raleigh Libraries. It will test the ability to transmit digitized agricultural research information from PC to PC through the INTERNET.

The positive outcome of this testing will have long-term effects and impact on library information delivery across the country. You will note from my examples of Title II-D, recipients have emphasized access, resources, and technology.

I would like to just briefly personalize this talk now to talk about some of the things that we have been able to do in Maine as a result of Title II-D. In 1985, the Board of Trustees of the University of Maine did a study to determine the quality of education in our State. What it found out was that we were not doing a particularly good job in reaching most of the people in the State.

They found out that Maine ranked 50th among States in adults participating in higher education and 45th in high school students going on to postsecondary institutions. One-third of Maine adults were found to be functionally illiterate, and 38 percent did not have high school diplomas. Maine's changing economy, from industrial to human services and information-based, would mean that a great many of Maine's people would be unprepared to compete for jobs in the year 2000.

The University of Maine trustees decided to do something about that, and they created, with the help of the Federal Government and the citizens of Maine, the Community College of Maine. This is a community college without boundaries. It is a telecommunications-based institution that goes beyond geographic barriers and solves the problem, to some extent, of the declining faculty in math and sciences and foreign languages.

What happens is, at seven campuses of the University of Maine, the faculty actually teach on interactive fiberoptic networks, and they are expanded now to 39 centers and 48 high schools of the State. The amount of access to students in the State of Maine now means that no one is beyond an 11-mile driving distance to the nearest higher education access point.

Library services to this area became very important. If we were going to be teaching in an academic environment without walls, how were we going to provide library service. Luckily, concurrent

to the development of the Community College of Maine, a bond referendum was passed, and the library system, URSUS, University Resources Serving Users Statewide, was developed.

As a result of the bond referendum, all of the institutions have been technologically linked to one catalog. The bond referendum, however, didn't allow for the Community College of Maine to be served, and that's where we put our resources from Title II-D. The resources that we received from that grant allowed us to tie the entire State educational system together so that library resources now can be made available and telefacsimile'd to any part of the State to support the educational programs of that community college.

I am proud of what we've been able to do in Maine. We've done it because of the citizens of Maine supporting us and because of the work of this committee. So I thank you.

[The prepared statement of Elaine Albright follows:]

Statement of
Elaine Albright
Director, Fogler Library
University of Maine, Orono

before the
Subcommittee on Postsecondary Education
House Committee on Education and Labor

Reauthorization of the Higher Education Act

April 16, 1991

I am Elaine Albright, Director of the Fogler Library at the University of Maine in Orono. I chair the Legislation Assembly, a subcommittee of the American Library Association's Legislation Committee. I also chair the Legislation and Regulation Committee of the Library and Information Technology Association, a division of ALA.

I am pleased to support the recommendations of ALA, other library associations, and higher education groups to reauthorize the Higher Education Act title II as Academic Libraries in an Electronic Networked Environment.

Higher Education Act Title II-D

The HEA II-D program of College Library Technology and Cooperation Grants was enacted in 1986 with the strong support of this Subcommittee, and was first funded in FY 1988. A review of its first three years indicates that a major need, funding of technological assistance projects for college libraries, is just beginning to be addressed by the current program.

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HEA II-D COLLEGE LIBRARY TECHNOLOGY AND COOPERATION GRANTS

FISCAL YEAR	NUMBER OF APPLICATIONS	TOTAL REQUESTED	FUNDING AVAILABLE	NUMBER OF AWARDS
FY 88	302	$26.8	$3.6	46
FY 89	318	30.0	3.6	52*
FY 90	228	26.1	3.7	40*
FY 91	238	29.0	3.9	NA

*includes continuation grants - 5 in FY 89 and 5 in FY 90

HEA II-D provides for four types of grants:

Networking Grants

Networking grants are designed to plan, develop, acquire, install, maintain, or replace the technological equipment and software necessary to participate in library resource-sharing networks. Networking grants have allowed academic libraries which could not otherwise have done so to take advantage of technological advancements. Funds have been used to purchase equipment and to pay membership fees and associated costs for participating in national, regional, state, and local bibliographic, document delivery, and library automation networks, all of which facilitate resource sharing activities.

Both the University of Detroit and Oakland Community College in Bloomfield Hills, Michigan, have received grants to participate in DALNET, the Detroit Area Library Network of 12 library systems. Headquartered at Wayne State University, DALNET was formed in 1985 to enable its members to participate in improved library services through shared automation. These libraries, all within commuting distance, include the Detroit Public Library and several university, community college, and hospital libraries. Library users gain access to a much wider variety of resources, and the

libraries use joint databases for both public service and internal processing.

A grant to Montana State University enabled the library to provide dial-up access to CatTrac, MSU's automated library catalog, via personal computers for decentralized on-campus users and off-site libraries. Access was also provided to individual businesses, farmers, schools, and individual citizens to one of the very few major library collections in the state.

Combination Grants

Combination grants are designed to establish and strengthen joint-use facilities, resources, and equipment. An example is a grant to the Network of Alabama Academic Libraries, a consortium of the Alabama Commission on Higher Education and 18 of the state's academic institutions that offer graduate education. Alabama considers its total academic library resources as one research collection. Collections at Auburn University and Tuskegee University form the backstop for statewide resource sharing in architecture, engineering, and veterinary medicine. The grant provided equipment and communications capability to improve document delivery in these three academic areas to students, faculty and other scholars throughout the state.

Services to Institutions Grants

Services to Institutions grants are designed to establish, develop, or expand projects or programs that improve information services provided to institutions of higher education. For instance, a regional library network, the Pittsburgh Regional Library Center, received a grant to extend its successful

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microcomputer and OCLC training programs to member libraries serving institutions of higher education in West Virginia, where high unemployment and a depressed economy created a special need. A second grant extended PRLC's training programs to member libraries in Pennsylvania and Western Maryland.

Research and Demonstration Grants

Research and Demonstration grants are for research and demonstration projects which meet specialized regional or national needs in using technology to enhance library and information science. A seminal grant to the North Carolina State University/ Raleigh Libraries is exploring improved access to agricultural research information by direct delivery of digitized research materials (both print and graphics) to desktop computers through the national NSFNET/INTERNET (the first generation NREN). NCSU libraries are testing and evaluating a full-scale, digitized-text delivery system involving several other land-grant campuses. The project builds upon a demonstration study on the transmission of digitized images that was completed in September 1990 and conducted jointly by the National Agricultural Library, the NCSU Libraries, and the NCSU Computing Center.

HEA II-D grants have a one-third matching requirement, thus ensuring that the institution is committed to carrying on the project. In the first three years, institutions in 36 states plus the District of Columbia and Puerto Rico have received awards. The grants also have a multiplier effect, reaching well beyond one campus. Each Combination project funded in FY 89, for instance,

directly affected from 4 to 137 libraries and, together, influenced the operations of 257 libraries.

The trends over the short history of this program seem to be toward making information about a library's holdings available electronically for the first time (mainly in smaller libraries), and in upgrading or replacing obsolete systems. The trend is also clearly toward faster delivery of needed documents through telefascimile equipment, and the beginning of online text delivery.

These trends will be intensified with the proposed upgrading of the NSFNET/INTERNET into a high-capacity National Research and Education Network. The proliferation of information and the growing number of formats in addition to ink-on-paper require new tools to organize and access information. I see all these trends converging in the provision of library services to support higher education in my state. HEA II-D helped us at a key point in our solution. I strongly support continuing this program with some amendments, particularly a priority in networking grants for developing institutions, as Title II-A -- the first program in a reauthorized Higher Education Act Title II.

Community College of Maine

In 1985, when the University of Maine Board of Trustees assumed responsibility for developing a state-wide community college system, the extent of Maine's educational inequities was becoming apparent. Access to education in Maine was uneven at best, with large, remote areas of the state struggling under the combined disadvantages of outdated high school curricula, limited resources, and a scarcity of teachers qualified to teach math,

science, and the foreign languages. To bring the resources of the University of Maine System to these underserved areas required considerable research and planning and, in that process, disturbing facts about Maine's educational well-being quickly emerged.

Maine ranked 50th among the states in adults participating in higher education and 45th in high school students going on to post-secondary institutions. One-third of Maine adults were found to be functionally illiterate, and 38% did not have a high school diploma or GED. The economy in Maine was changing and State planners determined that by the year 2000 one-half of jobs currently existing would be replaced by jobs which will require higher levels of education. It became clear that, unless steps were taken to address Maine's educational deficiencies, many of Maine's people would be unprepared to compete in the workforce of the next century.

The first obstacle to be overcome was Maine's large geographic area. As large in size as the other five New England states combined, Maine has one of the lowest population densities in the country. Scattered throughout the state, two-thirds of this population lives beyond a reasonable commuting distance to one of the seven regional University campuses. Students not deterred by distance must contend with harsh winter weather, poorly maintained secondary roads and minimal public transportation. The majority of the new students being targeted by the University of Maine System, working adults, can least afford to commute under these circumstances.

The second problem needing resolution was the growing shortage of faculty especially in the areas essential for future economic development: mathematics, physics, computer science, business, and foreign languages. Finding qualified instructors willing to travel to off-campus sites to teach these courses would be difficult, if not impossible.

After six months of System-wide planning, the design for the Community College of Maine envisioned a telecommunications system which would make use of staff and facilities at existing campuses, off-campus centers, and high school sites, and link them by fiber optic cable, point to multi-point microwave and satellite transmission. Electronic classrooms would transmit interactive secondary and post-secondary courses to students in rural areas across the state, eliminating the need for long distance travel to campus. Each off-campus center would be administered by local staff to provide a range of student support services to the sites in its region.

In November of 1987, the Community College of Maine Plan was approved by the University of Maine System Board of Trustees. Almost two years later, on September 5, 1989, the Community College of Maine began transmitting thirty-six courses to over 2,500 students in 47 locations throughout the state. Funding for the Community College of Maine Plan, a sophisticated state-wide human and electronic educational network, was received from State appropriations and help from federal title III grants.

The University of Maine System contracted with the Maine Public Broadcasting Network to design and build the Interactive

Television System (ITV). A two-way audio and video fiber optic spine, leased from New England Telephone, connects electronic classrooms located at each of the seven University of Maine System campuses. At the campuses, the classroom signal is broadcast via ITV from one transmitter to multiple receive antennae at the various off-campus sites. The signal can be transmitted from each campus to its own geographic region or throughout the entire state.

Students at ITV off-campus classrooms are taught by a professor who is simultaneously teaching to a classroom of students on campus. In the electronic broadcast classroom, one camera focuses on the instruction while another scans charts, diagrams or other visual materials. The class is electronically "transmitted" to the remote sites where the students can see and hear the instructor on television monitors. An audio talk-back system permits students in these distant locations to interact with the instructor and with other students.

Eleven University off-campus centers and 48 high school sites located throughout the State serve the bulk of the students enrolled in the Community College of Maine. The off-campus centers coordinate registration, academic advising, admissions, financial aid and other services for students at the center and at the high school locations in their region. A toll-free number is available for use by students, faculty or anyone wishing information about courses and services.

Many busy adults are taking advantage of Community College of Maine's accessibility. Surveys show that most of Community College of Maine's students are over the age of 30 (55%) and typically

travel a distance of 11 miles to the ITV classroom. A great majority of Community College of Maine students take their courses at their local off-campus centers. In the Fall 1989 semester 809 sections were offered -- 776 of these at off-campus locations. Because of the state-wide enrollment possibilities, Community College of Maine courses are not cancelled due to insufficient enrollment. For the first time, ITV has made it possible for many very small communities to offer their populations a full range of college courses.

Library Services

One of the highest priorities of Community College of Maine developers was to ensure high quality educational experiences for faculty and students involved in both on and off-campus courses. Central to the educational needs was providing ready access to library resources to support course research and term papers and developing student appreciation for lifelong learning beyond the classroom.

Compared with those of public institutions in other states, library resources in Maine historically have been substandard relative to institutional mission. Acquisitions budgets, though seldom subject to cuts, reflect the overall scarcity in State funding for academic programs. The library of the University of Maine, the central Land Grant University at Orono, contains fewer than 400,000 titles. The University of Southern Maine holds fewer than 300,000 titles. The holdings of the School of Law and the five regional campuses average 55,525 titles at each location. The importance of providing access to <u>all</u> of the University resources

in order to meet the needs of any one campus or off-campus site became increasingly evident.

Concurrent with the development of the Community College of Maine, the citizens of Maine passed a bond referendum to support the development of an on-line catalog for the nine campus libraries of the University of Maine System. An integrated library automation system, URSUS (University Resources Serving Users Statewide) was implemented in 1988. URSUS contains records for books, serials, microfilm, sound recordings, maps, documents, and audiovisual materials located in the seven campus libraries and four branch libraries.

Telecommunications links upgraded for URSUS as well as for the Community College of Maine create a network of about 200 public and staff library terminals accessing the University of Maine System on-line catalog. The catalog of 1.3 million volumes can be searched from any PC or terminal on campus, and dial access ports provide additional access for home computers and other private and public institutions throughout the state. Custom designed programs permit unmediated ordering of material from other campuses by patrons, and FAX machines at all campuses and sites of Community College of Maine allow speedy transmittal of needed information. As a result of the success and widespread accessibility of URSUS, inter-campus borrowing has increased 35% for each of the last two years.

The original bond referendum did not extend library coverage to the developing Community College of Maine, and in 1989, the University of Maine System Libraries requested support from Title

II-D to expand and further provide access to the library's critically important education and information database. As a result of federal funding from Title II-D, 29 regional centers and off-campus public locations can now provide a full range of library services to the Community College of Maine. This year, with the help of another Title II-D grant, the URSUS on-line catalog holdings will be significantly increased by adding the collections of the Maine State Library and the Maine State Law and Legislative Library. During 1991, many high school sites will also be linked to URSUS.

The off-campus library program has been an integral part of Community College of Maine's successful first year. The program assists faculty state-wide in obtaining reserve materials for outside readings, presents library-use instruction in "live" or ITV classes, and provides students, faculty and staff with toll-free reference assistance. But the most popular component of the program has been URSUS, the on-line catalog of the University of Maine network.

Summary

Through the combined efforts of state, private and federal funding (Title III and Title II-D), the State of Maine has been able to expand access to higher education to its most rural areas, significantly increasing the numbers of citizens taking advantage of higher education opportunities. Library resources have been centralized through URSUS and are made available state-wide at affordable telecommunications costs through dedicated and dial-up lines. With Maine's sophisticated telecommunications capabilities,

every citizen, no matter what their geographic location, can have access to the faculty and resources of the University of Maine System and its Community College of Maine, and to the combined resources of its libraries. As a participant in the INTERNET (and soon the National Research and Education Network), resources available through URSUS continue to expand, and currently include the resources of CARL (Colorado Alliance of Research Libraries) and other libraries subscribing to INTERNET. We are proud of our accomplishments in Maine and realize the debt we owe to the federal government, specifically HEA II-D, and Maine citizens for making all this possible.

Profile of an HEA Title II-D Project

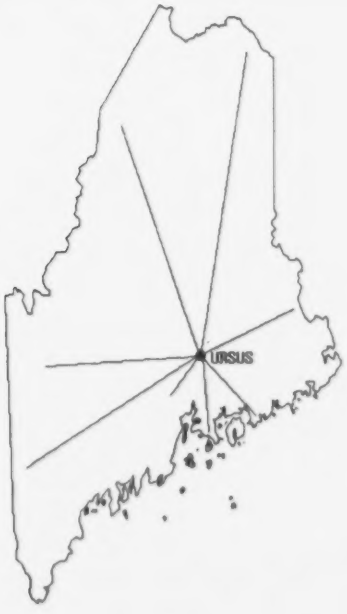
Library: University of Maine

Location: Orono, Maine

Project: Library Resources for Distance Learning

Award: $63,450

Description: The University of Maine has received II-D funds to extend library services to the Community College of Maine, a "campusless" system supporting distance learning at off-campus locations throughout the state. At 29 locations such as vocational education sites, schools, and public libraries, the II-D project enables students to use the University of Maine online library catalog with the combined holdings of nine campus libraries, an automated library circulation system, and interlibrary loan or telefacsimile service from the University of Maine libraries. The project uses computer and communications technology to make university resources available in a timely manner to students at very rural and isolated locations.



Mr. KILDEE. Thank you, Ms. Albright.

The Chair notes that the panel has been joined by Congressman Craig Washington of the State of Texas.

Ms. Bowman.

STATEMENT OF MARTHA BOWMAN, DIRECTOR OF LIBRARIES, UNIVERSITY OF MISSOURI-COLUMBIA

Ms. BOWMAN. Thank you.

I am Martha Bowman. I am Director of Libraries at the University of Missouri at Columbia, and I am here representing the University of Missouri system as well as the people of Missouri who are concerned with higher education and with library service.

Because of the Higher Education Act Title II grants, library service in our State has been improved. Deserving students have been able to go to library school. We have been able to save the contents of brittle materials that would have otherwise completely deteriorated, and we've been able to make available unique materials that we have in our library to the Nation as well as the world.

As an example of this, in 1984, 1985, and 1986, my campus received Title II-C grants to make available and to preserve special collections that we hold within the university. And it's interesting to note that many of these materials are fairly unique, and, in some cases, we own the only copy in the whole United States.

Also, with our pre-1800 pamphlet series, we checked that against the holdings of the British Library and found that 25 percent of those holdings the British Library did not have, even though those materials pertained, to a great extent, to England's social history.

So, as you can see, we've had the opportunity to make available, by adding these to the national data base, the fact that we have these unique materials and this has been important to researchers and scholars throughout our country and in other countries as well.

But Title II has not only benefitted large research libraries. In our State, the Westminster College, working with the William Woods College, applied for and received a Title II-D grant, which allowed them to continue to participate in the OCLC lending network as well as in our own State network. So the benefit has been to institutions of all sizes, and each of the grants that has come to a library has benefitted not only that institution but our whole academic community within the State, and it ripples on beyond that.

So the benefits that we've had in the past have been fairly significant, but we feel that by reauthorization and funding of this act that the future holds even more potential for us. Right now there is a highly increased level of cooperation going on within our State, and this is occurring for very good reasons.

Right now the University of Missouri library directors, each from four campuses, have spent a great deal of time in the last few months working together on planning sessions. We are very serious about developing the means to do joint collection development so that we do not duplicate each other's acquisitions in purchasing. We wish to improve our document delivery among our campuses, and we wish to do more with the on-line technical network that we now have in place.

In addition, there is a group in Missouri that's titled the Missouri Academic Library Administrators, and this is a self-formed group of private and public library directors. They wish to work together and find new ways to access information. I think the bottom line is that we realize in our State that we cannot own everything that our users need, and we don't want to do that. We rather want to have the means to access and share that kind of information.

Unfortunately, in our State we have experienced a lot of erosion within our library budgets. While that has affected the university greatly, it also affects the smaller institutions, because they rely upon us because we are the research library for the university and for much of the State.

At this time, we think it is particularly important that we work together, not only because our budgets have been shrinking, but because we have the potential to do a lot together through a new network, which is called MOREnet. MOREnet stands for the Missouri Research and Education Network. It is a telecommunications network that is being implemented this year through funding from the National Science Foundation.

It will connect the 4 year institutions that are publicly supported within our State, and there is the potential that we will be able to broaden it beyond that once the network has started working effectively. And, of course, through MOREnet we will be able to interact with the national network, and I refer here to the comments that have been made earlier about NREN, the National Research and Education Network.

We are very hopeful that that legislation will be passed this year and that will be the beginning of implementing a very powerful network that will make connections between Missouri and the rest of the United States in ways that will really help us a great deal.

We anticipate that working cooperatively we would submit requests for funding for the future from Title II-C and II-D, particularly. In our opinion, we think that HEA could provide a very catalytic effect in providing to our State the power to reach information in a way that just simply has not been possible before.

We know that the future in our State lies in having a better, a more well-educated work force, attracting more industries that are knowledge-dependent, because those are the types of businesses and industries that are forming in this day and age and are succeeding. In order to do this, we have to have powerful access to information for serving not only our university community but the State as well.

So it is with all of that in mind that I strongly support the American Library Association's and the Association of Research Libraries' recommendations for the reauthorization of HEA, with a particular emphasis on the technology component and what it will be able to do for us in the future.

Thank you very much.

[The prepared statement of Martha Bowman follows:]

Statement of

Martha Alexander Bowman

Director

University of Missouri-Columbia Libraries

before the

Subcommittee on Postsecondary Education

House Committee on Education and Labor

on

Reauthorization of the Higher Education Act

April 16, 1991

I am Martha Alexander Bowman, Director of the University of Missouri-Columbia Libraries. I am representing the University of Missouri System and those in Missouri who are very concerned with higher education and library service. Including each of the four campuses of the University of Missouri, the state has thirteen institutions of publicly supported higher education. There are twenty-nine private and fourteen church affiliated institutions of higher education in Missouri.

I have been involved with the Higher Education Act Title II since 1968 when I received a II-B fellowship which allowed me to attend the Catholic University of America and obtain my Master's in Library Science during the 1968-69 academic year. In my career I have been associated with institutions which have applied for and obtained funding under II-C and II-D. In

addition, I have served several times in the panel review process for II-C.

BENEFITS TO MISSOURI. Higher Education Act (HEA) Title II grants have made significant improvements in our state. Deserving individuals have attended library school, and brittle books have been saved from total disintegration. Students and scholars now have access to library materials which they otherwise would not have been able to locate. Libraries in the State of Missouri have been given the opportunity to accomplish meaningful goals of resource sharing, as well as collection development and management, with HEA funding. Grants to Missouri institutions have been the following:

Between 1966 and 1990, 40 Title II-B fellowships totaling $289,520 were granted to the **University of Missouri-Columbia**. In addition, Title II-B funded three institutes in Missouri between 1968 and 1979. One was held at **Southeast Missouri State University** and two were held at the **University of Missouri-Columbia**. Support provided for the three institutes totaled $88,556. These represent significant contributions to education for librarians and information specialists in Missouri.

The **Missouri Botanical Garden** located in St. Louis received six Title II-C jointly administered grants with the New York Botanical Garden, providing the nation's research and academic library community with access to detailed, high-standard bibliographic records of a significant portion of both libraries'

holdings in botany, medical botany and pharmacology, and horticulture, and of scientific journals. These grants were made in 1978, 1979, 1980, 1986, 1987 and 1988.

Washington University in St. Louis received a Title II-C grant in 1983 which enabled them to complete the acquisition of the literary papers of eight writers who are central to the Modern Literature Collection, making all of the literary manuscript collections more accessible to students and scholars and preparing a published guide to all the contemporary literary manuscripts.

In 1984 the **University of Missouri-Columbia** Libraries received a Title II-C grant to catalog the some 3,200 titles included in the Spanish Drama of the Golden Age collection. Additionally, full-level machine readable cataloging was provided for the 400 Golden Age titles in the microform collection Four Centuries of Spanish Drama, and 200 other manuscript and printed Golden Age plays reproduced directly from copies held by the most prestigious libraries in the world. MU Libraries' microfilm copy of these plays is, in most cases, the only copy in the United States. Records were entered into the OCLC database making them accessible nationwide.

In 1985 and 1986 the University of Missouri-Columbia Libraries **received Title** II-C grants to provide or improve bibliographic access to pre-1800 imprints held by the UMC Libraries. Approximately 31,700 pre-1800 imprints were treated. Sixty percent of the titles were new to OCLC, and twenty-five percent

were not held by the British Library. Many of these titles concerned historical/religious issues of non-conformity, passive obedience, and liberty of conscience. Other works included were the Libraries' incunabula collection. Additionally the grant provided for preservation of materials.

The Higher Education Act provided a Title II-D grant to **St. Louis College of Pharmacy** Library in 1989 to add the College of Pharmacy Library to the Bibliographic Access and Control System (BACS). An innovative network developed by Washington University Medical School Library, BACS enhances resource sharing among area medical libraries, which also include Washington University Medical School Library, the nearby Medical Center Libraries, St. John's Mercy Medical Center Library and St. Mary's Health Center Library. Resource sharing was greatly increased through direct reciprocal borrowing privileges and through formal cooperative collection development policies based on the management reports generated.

A Title II-D grant was received by **Westminster College** in 1988 in cooperation with **William Woods College** to purchase the equipment necessary to continue participating in the OCLC inter-library lending network and in Missouri's new statewide inter-library lending system.

Each of these grants has strengthened not only the institution that received them but the academic community throughout the state of Missouri and the nation.

BEST COPY AVAILABLE

(For detailed information of HEA grants to Missouri institutions see attached abstracts)

MISSOURI'S FUTURE. Higher education plays a key role in assisting the United States to face the economic and technological challenges which exist in the world today. In Missouri we know the economy of our state is tied closely to the availability of an educated work force and of access to information and knowledge.

The industries which have contributed most to employment growth over the past few years in Missouri have been in the service and trade sectors. The following were the most rapidly growing two-digit industries in Missouri between 1984 and 1987 according to The Changing Structure of the Missouri Economy (June 1989) prepared by the Office of Research in Regional Economic Development at the University of Missouri-Columbia:

*SIC	Industry	Increases in Employment
82	Educational Services	20,143
73	Business Services	18,357
80	Health Services	16,866

*Standard Industrial Classification

The most jobs were added in the Educational Services industry. Following this industry on the list were the Business Services and Health Services industries. All three of these are highly dependent on access to information and are knowledge-

dependent. These trends within Missouri are reflective of trends within the nation.

During the past ten years about 75% of new job growth in the United States has been generated by businesses that employ fewer than twenty people. Many of these small businesses rely upon access to information and technology as resources essential to being competitive. Therefore such businesses tend to locate in areas where institutions provide access to information in a rapidly changing research environment.

Economic development depends upon maintaining and developing strong research libraries, information networks, collection access and upon supporting education with the best research sources possible. The movement toward a more complex, service-oriented economy results in decreases in the percentage of unskilled jobs and increases in the percentage of jobs requiring skills and education. In Workforce 2000: Work and Workers for the 21st Century, William B. Johnston reported that in the future the majority of new jobs will require postsecondary education. By the year 2000, 24% of new jobs will require four or more years of college. Jobs requiring the lowest skill levels will drop from 9% of the present job pool to 4% of new jobs, and jobs requiring the highest skill levels will grow from the current 24% to 41% of new jobs.

The reauthorization of the Higher Education Act is an essential investment in our nation's ability to provide the best library support for education and research and the best access to

information. Rapid, efficient and comprehensive access to research resources for decision-makers and researchers of all kinds provides a key element in insuring positive social and economic development for the United States now, and in the future. Ideas, thorough understanding of complex issues, accurate and thorough research, and timely and effective communication are among the most powerful forces shaping the future for all of us. Reauthorization of the Higher Education Act will have a catalytic effect in providing the power of information access in our nation. HEA expenditures are investments in America's future productivity, and must be viewed as no less important to that future than private investments in the business sector.

Successful economic and social development depend upon an educated population. Thinking citizens, and a work force that can compete in the international economic market, are essential now and will become even more important in the future. Access to timely and comprehensive information and ideas, and the ability to communicate rapidly in a technologically sophisticated environment, must become characteristics of our society as well as our economy.

FUTURE BENEFITS OF HEA. The academic libraries within the state of Missouri are experiencing a new and significant level of commitment to cooperative collaborative endeavors. The University of Missouri Libraries, within a four campus system, constitute the largest research collection in the state. Last month

the Library Directors of the four campuses met in a planning session which explored issues related to the improvement and cost effectiveness of libraries and information services. The Directors agreed to develop and implement a cooperative collection management policy and program, to assess the technological options for future automation, and to increase the support for cooperative library services.

At the same time, the Directors affirmed the importance of high quality service to library patrons and took note of the serious deterioration of the libraries' abilities to purchase books, journals and other materials. The deterioration in these areas results directly from the shrinking share of the state's general operating budget at the same time the rapidly increasing prices for library materials, especially journals, has risen higher than the Higher Education Price Index. The reduction in base funding over the past decade varies among campuses, ranging from reductions of 30 to 50 percent.

The Directors also wish to update the libraries' technologies in order to provide students, faculty and users from through-out the state with access to the important automated resources available today. The University of Missouri has been a pioneer in the field of library automation. Almost 30 years ago the library at Columbia used punched cards to circulate books, placing that campus at the forefront of applied automation. In 1984 the University system implemented a four campus online catalog, a remarkable achievement at that time. In more recent

years, however, the University has not been in a position to remain a leader in this area, and the level of automation is average for a major research institution.

Last June the governing board of the University was given a report on the funding needed to restore the base budgets of the four campus libraries to the level they held in the 1970's. An additional $6.7 million is needed for the libraries to purchase books, journals and other materials at the pre-1980's level. The amount of monies required for updating technologies is $2.5 million. The positions needed to bring the staffing levels to the average of those of comparable institutions would require funding of $2.5 million. The monies necessary to restore the base budget total $11.7 million in continuing funds.

Other academic libraries in Missouri also find themselves in an environment which requires reductions to collections and services. The smaller libraries depend upon the larger research collections to provide their users with materials not available in their own holdings; thus, reductions to the University of Missouri Libraries result in a weakening of resources for the entire state. The directors of the academic libraries, for both public and private institutions, have begun to address their collective concerns, and a group titled the Missouri Academic Library Administrators (MALA) is now working together to find ways to improve access to information and knowledge through mutual programs and services.

At this time, as new and significant levels of cooperation emerge, and the financial resources of academic libraries shrink, the support for academic libraries becomes even more critical than it has been over the past two decades. Reauthorization of the Higher Education Act would provide libraries with the means to work together in an even more collaborative manner. It is our hope in Missouri that HEA will be reauthorized and that academic libraries in our state will be able to use Title II to fund projects to share our resources and strengthen our services.

The communications infrastructure for a network among the publicly supported four year institutions of higher education is currently being implemented in Missouri. Funded by the National Science Foundation, the Missouri Research and Education Network (MOREnet) is administered by the Columbia Campus and allows the other institutions to be part of the existing national network. In May the Columbia Campus Libraries are co-sponsoring the first MOREnet conference which will bring together staff members from the libraries and computer centers of all participants. The potential for library use of the network will be one of the main focal points of the conference.

The academic libraries in Missouri entered the 1990's facing severe limitations in their budgets, but at the same time, they see the potential to use the taxpayers' monies effectively to improve services through the commitment of libraries to share resources. The reauthorization of the Higher Education Act will provide the opportunity to assist in the accomplishment of this

resource sharing and in the implementation of projects designed to access and deliver information in new ways. The importance of this legislation is heightened further by the promise of the enhancement of the National Research and Education Network (NREN) and the potential uses of a highly powerful network.

Missouri's academic libraries intend to submit applications under HEA Title II. A major focus of projects for which we would seek funding would be the sharing of bibiliographic records in order to reduce the number of duplicative holdings in the collections of the institutions. Methods to enhance interlibrary loan and document delivery systems would be addressed in order to allow resource sharing to work effectively.

Other areas which might be the subject of proposals for HEA Title II funding include access to libraries' collections nationally and internationally, use of full text electronic documents, management of electronic publications, and local mounting of databases on institutional mainframe computers. Academic libraries in Missouri know that the use of resources should serve to locate and deliver the information which our users need in a timely fashion, regardless of where it is located. We no longer have the goal of adding to our own collections comprehensively in order to meet our users' needs. Increasingly we have placed our priorities on the ability to access information rather than to acquire it.

REAUTHORIZATION OF HEA TITLE II. The reauthorization is needed to provide the libraries of Missouri and other states with the opportunity to make all information resources and recorded knowledge available to the students and faculty of our universities and users throughout our states. I fully support the HEA reauthorization recommendations which have been submitted by the American Library Association and the Association of Research Libraries.

In the recommendations, Title II-A supports grants to needy academic libraries for the technological equipment necessary to automate library procedures, and to organize, access and/or utilize materials in electronic formats in order to participate in networks for sharing of library resources. Linkages such as the current Internet and the proposed National Research and Education Network provide these libraries with the means for accessing information their users need. Given the need to access, rather than own, information resources, this program will be essential to academic libraries.

Title II-B grants provide funds for the training of persons in librarianship, especially minorities. The Dean of the School of Library and Informational Science at the University of Missouri-Columbia, Mary F. Lenox, and I were both recipients of this fellowship. Since the inception of HEA Title II-B, more than 4,000 fellowships have been awarded, many to members of minority groups. Between 1973 and 1988 1,194 fellowships,

representing 70% of the total number granted during that time period, were granted to members of minorities.

There is a strong need to attract more and better trained professionals to the library and information science profession. Data indicate that at least 50% of library school faculty will probably retire in the next 10-15 years. It is critical that a new pool of faculty be developed to meet this growing need.

An increasingly complex technological research environment makes it essential that a well educated and dynamic pool of librarians and library educators exists. Continued development of information networks to enable the widest possible range of user access and education of librarians and information specialists to assist in making these resources accessible to those who need them are high priorities for all of us.

The Title II-C Strengthening Research Library Resources Program of the Higher Education Act of 1965 has resulted in vast quantities of research materials, in all subjects and formats, being made accessible to scholars in educational institutions, large and small, and to researchers in the private sector. The Title II-C program has enabled libraries to extend its commitment to resource sharing and the exploitation of new technologies for the ultimate good of researchers and students throughout the nation. Further, Title II-C grants have been the major source of funding for preservation efforts in academic and research libraries. Preservation projects have rescued fragile and irreplaceable research materials by microfilming and a variety of item-

specific conservation activities saving valuable materials for future users.

Funds for collection development have enabled the purchase of advanced research materials which enliven all parts of our cultural and intellectual life. Washington University's Title II-C grant to acquire the literary papers of Missouri writers exemplifies this. Title II-C has encouraged inter-institutional cooperation, especially in joint acquisition of material and joint use of collections.

As researchers increasingly operate in an electronic environment reaching beyond their home institutions, the library and information services which support their efforts must continue to anticipate their information needs and technological methods of operation. No research institution can afford to collect all information needed by its primary clientele. A federal catalyst to cooperative network development and resource sharing is essential to the U.S. research effort. It is very important that support for these grants continue in order to provide the librarians, the access to information and knowledge, and the application of technologies needed for our future.meet the needs of information access of the future.

HEA Title II-C
Grants to Missouri Institutions

Institution: Missouri Botanical Garden
St. Louis, Missouri
Project Director(s) James R. Reed
Grant Period: October 1, 1978-September 30, 1979
$200,000, FY 1978
$200,000, FY 1979
$244,571, FY 1980
$240,044, FY 1986
$250,000, FY 1987
$253,320, FY 1988
Grant Number: G007803550/G008610198
Jointly administered with the New York Botanical Garden, this project will complete the recataloging and reclassification of the large and unique botanical/horticultural library collections at both institutions. The New York Botanical Garden will undertake two tasks: (1) retrospective entering of the Q, R, S, and X classes of the Library of Congress shelf list into the OCLC data base, and (2) continuing at an accelerated rate the recataloging of its collection. The Missouri Botanical Garden will concentrate upon accelerated recataloging of its collection, utilizing, in large measure, the OCLC records provided by the New York Botanical Garden's shelf list input. This will provide the nation's research and academic library community with access to detailed, high-standard bibliographic records of a significant portion of both libraries holdings in botany, medical botany and pharmacology, and horticulture, and of scientific journals. (This is the abstract for the first grant. Subsequent grants continued the project, with abstracts using the same language. In all, six grants were funded for this purpose.)

HEA TITLE II-C
Grants to Missouri Institutions

Institution: Washington University
St. Louis, Missouri
Project Director(s) Holly Hall, Head of special Collections
Grant Period: October 1, 1983-September 30, 1985
Funding/Year: $205,168, FY 1983
$ 62,325, FY 1984
Grant Number: G008301296/G008488703
Washington University will complete the acquisition of the literary papers of eight writers who are central to the Modern Literature Collection, thereby preventing the dispersal of significant portions of the manuscript collections, and will make all of the literary manuscript collections more accessible to students and scholars by completing their arrangement and description and preparing a published guide to all the contemporary literary manuscripts. The finding aids will conform to the standard set of descriptive data definitions recently developed by the Society of American Archivists' National Information Systems Task Force so that the format will be suitable in the future for inter-institutional data exchange. Information on the holdings will be contributed to OCLC and to Washington University's online catalog and reported to the National Union Catalog of Manuscript Collections (NUCMC). The Modern Literature collection of manuscripts is comprised of more than 100 different groups of papers. The authors documented are important to any literary scholar concerned with the development of contemporary writing in North America and Great Britain.
(The second grant continued the project through the building of "detailed indexes and selected name and subject index entries..."

HEA TITLE II-C
Grants to Missouri Institutions

Institution: University of Missouri-Columbia Libraries
Columbia, Missouri
Project Director(s) Thomas Shaughnessy
Grant Period: October 1, 1984-December 31, 1985
Funding/Year: $68,230, FY 1984
Grant Number: G008400442

The Spanish Drama of the Golden Age collection includes 3,200 titles, none of which is recorded in the OCLC data base. This project will provide complete cataloging according to national standards for all of the titles in this collection, as well as those related titles owned by the UMC Libraries. These records will be entered into the OCLC data base according to "Profile Matching" arrangement. This will enable the entire Spanish Drama of the Golden Age collection to be retrieved at one time on OCLC. This cataloging effort is one of the earliest Major Microform Projects funded by HEA Title II-C. The purpose of the Major Microform Project, then a project of the Association of Research Libraries and now of OCLC, is to provide full-level machine readable cataloging for large microform sets owned by research libraries but uncataloged in local card or online catalogs, in OCLC or other bibliographic utilities. Research libraries rarely have had sufficient staff to catalog every title in large microform collections. The Major Microform Project encourages libraries to catalog every title in large microform collections. The Major Microform Project encourages libraries to catalog large microform sets in OCLC and tag the bibliographic records so that they can be retrieved en bloc by other libraries, thus eliminating the need to manipulate individual records and saving untold cataloging time. The University of Missouri-Columbia Libraries and the University's strong Spanish literature program had a pressing need for adequate cataloging of the microform collection Spanish Drama of the Golden Age and numerous other Golden Age plays owned by the Libraries. Title II-C provided funds to catalog 3,200 plays in Spanish Drama of the Golden Age according to Major Microform Project procedures. Additionally, full-level machine readable cataloging was provided for the 400 Golden Age titles in the microform collection Four Centuries of Spanish Drama and 200 other manuscript and printed Golden Age plays reproduced directly from copies held by the most prestigious libraries in the world. MU Libraries' microfilm copy of these plays is, in most cases, the only copy in the United States. Scholars now have accurate information about these bibliographically complex early Spanish plays. Libraries holding Spanish Drama of the Golden Age have been able to acquire the machine readable cataloging for loading into their online catalog, thus providing instant bibliographic access to these plays.

HEA TITLE II-C
Grants to Missouri Institutions

Institution: University of Missouri-Columbia Libraries
Columbia, Missouri
Project Director(s) Thomas Shaughnessy
Grant Period: October 1, 1985-December 31, 1986
Funding/Year: $202,757, FY 1985
$151,527, FY 1986
Grant Number: G008510060/G008610220

The purpose of this project is to provide or improve bibliographic access to approximately 21,000 pre-1800 imprints held by the UMC Libraries. 5,200 titles will be treated, approximately 70 percent of which are not in OCLC. To those records which are in the OCLC database, the Library's holding symbol will be added. Many of these titles will also be reported to the Eighteenth Century Short Title Catalog or the Stillwell/Goff incunabula census. Finally, pre-1800 titles needing preservation will be treated or microfilmed. (The second grant continued the project by treating an additional 10,710 titles and recording information as noted in the first grant.) Funds provided by the HEA Title II-C Program permitted the creation of bibliographic access to 5,200 pre-1800 imprints held by the University of Missouri-Columbia Libraries. This previously uncataloged English history collection contains works on virtually every issue of the fifteenth through the eighteenth centuries. Quantities of material on such controversial subjects as the Sacheverell affair, the Bangorian controversy, the Popish Plot and the Exclusion Crisis are in the collection. The historical/religious issues of non-conformity, occasional conformity, passive obedience, and liberty of conscience are thoroughly documented with primary sources. The project provided full-level machine readable cataloging for these rare titles, and made these titles known and accessible to MU scholars through its online catalog, and to other scholars nation-wide through the OCLC database. Sixty-three percent of the titles were new to OCLC and twenty-five percent were not held by the British Library. HEA Title II-C funds also provided funds for preservation enclosures: mylar wrappers, acid-free envelopes, polyester encapsulations and phase boxes. Bibliographic information about the titles in the collection was reported to national and international bibliographic projects, the Eighteenth Century Short Title Catalog (ESTC), the North American Imprints Project (NAIP) and the revision of Donald Wing's Short Title Catalogue (STC II). That the Libraries' have daily inquiries about titles in this collection is testimony to the value of this project to scholars.

Renewal of this HEA Title II-C grant made possible the continuation of the project started in 1985-1986 (described above). During the grant year, 3,450 previously uncataloged titles were given full-level machine readable OCLC cataloging. This completed the cataloging of the Libraries' rare English history collection. Additionally, 1,905 of the Libraries' most scarce and valuable titles for which only minimal cataloging was available were cataloged according to accepted cataloging rules and were entered into the OCLC database. This included the Libraries' incunabula collection; its early printing history collection, sixteenth through eighteenth century illustrated books, including its herbals and other works of natural history, emblem books, illustrated works by Ovid, books of trades and the dance of death collection. Phase boxes, mylar wrappers and other enclosures were provided as needed.

HEA Title II-D
Grants to Missouri Institutions

College Library Technology and Cooperation Grants Program
Institution: St. Louis College of Pharmacy Library
Project Director(s) Judith A. Longstreth, Library Director
4588 Parkview Place
St. Louis, MO 63110
(314)367-8700, ext. 230
Grant Period: 1 year (June 1989)
Amount: $31,280
Grant Number R197A00019
This grant will permit the addition of the College of Pharmacy Library to the Bibliographic Access and Control System (BACS). An innovative network developed by Washington University Medical School Library, BACS enhances resource sharing among area medical libraries. The network provides an excellent avenue for increasing resource sharing between Washington University Medical School Library, the nearby Medical Center Libraries, St. John's Mercy Medical Center Library, St. Mary's Health Center Library, and the St. Louis College of Pharmacy Library. The addition of the College of Pharmacy's collection, with its complementary subject strengths, to BACS will significantly extend the integrated library network's resources and enhance information services for the students, faculty, and health practitioners of all participating institutions. BACS will provide the St. Louis College of Pharmacy with online access to its own holdings as well as to the collections of all BACS libraries. Resource sharing will be greatly increased through direct reciprocal borrowing privileges and through formal cooperative collection development policies based on the management reports generated.

TITLE II-D
Grants to Missouri Institutions

Institution: Westminster College
Project Director(s): William E. Marquardt, Head Librarian
Reeves Library
Fulton, MO 65251
(314) 642-3361, ext. 267
Grant Period: October 1, 1988-September 30, 1991
Amount: $22,446
Grant Number: R197A80198A
In cooperation with William Woods College, Westminster College will purchase the equipment necessary to continue participating in the OCLC interlibrary lending network and in Missouri's new statewide interlibrary lending system. As a result, the academic programs of Westminster and William Woods will be strengthened by expanding the clientele for the colleges' excellent interlibrary loan services. To help achieve this goal, the interlibrary loan librarian will implement a publicity and promotion program and the reference librarian will make online database searching services more readily available. Over the 3 years of the project, Westminster and William Woods will increase access to their collections by adding holdings statements for approximately 6,000 volumes to the OCLC online database and by updating holdings statements of 700 periodical titles in the Missouri Union List of Serials database.

BEST COPY AVAILABLE

Chairman FORD. Thank you very much. I am sorry that I was called away by another chairman to negotiate another piece of legislation out of this committee. But we have reviewed your statements.

I want to compliment the panel on the way in which you organized your testimony so there was very little repetition and you covered all of the important parts of library concerns that we will be looking at in the Higher Education Act. It shows that you did some homework before you came to testify. We wish that all panels would think about doing that. It makes it a lot easier for us to digest it and know where you stand.

I am very pleased to see all of you here and all of the people that you brought with you who show their interest in what we're doing by being here. We expect—Mrs. Bowman, you're from Missouri——

Ms. BOWMAN. Pardon me?

Chairman FORD. You're from Missouri?

Ms. BOWMAN. Yes.

Chairman FORD. Well, we had intended to have the first field hearing on the reauthorization in my district at a little school called the University of Michigan, and then it became public that the President was going to be there the same weekend making a commencement speech, and that made some people nervous, not at the university, but other people.

So we're now going to have the first field hearing, by previous agreement with my friend Tom Coleman, we'll be in Missouri instead of Michigan. It does not mean that we're ceding our majority status at all.

[Laughter.]

Mr. COLEMAN. That's not what I heard.

Chairman FORD. But I think you should carry back to Missouri that he's such a tough guy that I wouldn't think of trying to change his dates so that my State could upstage him on this.

Mr. Coleman.

Mr. COLEMAN. Thank you, Mr. Chairman. We look forward to having you in Kansas City on the 6th of May.

Mr. Dougherty, the president, I want to get clear with you, on the so-called NREN, National Research and Education Network, is it your hope and desire that any authorizing legislation be contained in the Higher Education Act Title II?

Mr. DOUGHERTY. I'm sorry. I didn't——

Mr. COLEMAN. Is your hope that, if there is any authorization that's required to put this in place that it be placed in this bill?

Mr. DOUGHERTY. Well, what I would like to see happen is that the legislation provide so that libraries, research libraries and other types, can be players in the NREN, as it evolves in the country.

Mr. COLEMAN. And you don't have a preference, then, what vehicle this is or what legislation?

Mr. DOUGHERTY. Well, I think there's no question from the HEA that this, to my mind, is the proper vehicle so that we can be participants.

Mr. COLEMAN. Great. Thank you.

And, briefly, Ms. Bowman, MOREnet that you talked about, which starts off with public institutions, why is that, and can you and will you be adding other private, nonpublic?

Ms. BOWMAN. That's correct. Yes, the proposal that was submitted by the computer center at the Columbia campus, to the National Science Foundation, was to connect the publicly supported universities in the State, and that is being implemented now. That's what was funded.

The anticipation is that we will—it's a 2 year grant from NSF—the anticipation is that, during this first year, we will have it fully implemented; next year we will fine tune and begin to work on it as a resource-sharing mechanism. And we're going to look at ways in which the other institutions in the State, particularly the libraries, could access each other through that network.

It would be a governance situation, in terms of needing to change the governance to bring in other institutions. But what we think, on the Columbia campus right now, is that this is a foundation upon which we will build. There is also some serious discussion of having high schools connected to it, and we have two high schools in Columbia, and there is a strong possibility that they will begin to tie into at least the Columbia campus network through MOREnet in the near future.

We'll see how that goes, but there is a great deal of interest on the part of the high schools to be part of this.

Mr. COLEMAN. Is that another grant application?

Ms. BOWMAN. Well, in addition to the NSF money, the member institutions do contribute as well, so it's not totally dependent on NSF. And we anticipate that we need to find our own basis of funding, so that, within 2 to 3 years, it will be funded pretty much on its own, unless there are other grant opportunities for special projects to be conducted on the network, that kind of thing.

Mr. COLEMAN. Well, it sounds very good. I encourage, as all of you do, the pooling of this information, because why duplicate when we have limited resources, and any prestige that may have been at one day for having the largest collection, today, to share that with everybody is certainly important.

I, too, want to join the Chairman in thanking all of you in having good written testimony divided up sequentially, logically, and making your statements brief enough that we can have a good hearing here without spending the entire day.

I have to go, because I have people waiting for me in my office, but I thank all of you for coming.

Ms. BOWMAN. Thank you.

Chairman FORD. Thank you.

Mr. Kildee.

Mr. KILDEE. Thank you, Mr. Chairman.

Again, I want to commend the panel for really covering a lot of fronts. It's really been a very comprehensive overview of the Title II, and I appreciate that. I also want to thank this panel and also thank someone who has been a steady and reliable resource person to us here in Washington, Eileen Cook, who has been excellent.

We are always have glad to have you here, Eileen. You do an excellent job, and you are a very reliable and steady resource person.

Chairman FORD. Now, you've blown her cover.

Mr. KILDEE. Well, I think she's pretty well known here. I don't think she has much anonymity in this place.

I would like to ask this question, and maybe we'll get 10 different answers, which is fine, or maybe two. If each one of you had within your power to enact two changes or two improvements in this Title II, could you suggest which are the most pressing needs for improvements or changes, upgrading, in this act?

We'll start with the University of Michigan here. You don't have to reply. I just sometimes like to tap the brains of people and see, if we were limited to two, what two you think would be the top priorities.

Mr. DOUGHERTY. I'm glad I don't have to make that judgment, Congressman, because HEA has made such an important contribution to the work of—the services of research libraries and to the education of professionals that I just simply couldn't make a priority at this time. I will trust to your wisdom and judgment.

Mr. KILDEE. So you think mostly fine tuning and funding; right?

Mr. DOUGHERTY. Well, as I mentioned before, the two areas—when you talk about fine tuning, I look at these as opportunities, the dawn of the networking era, that libraries can greatly increase their ability to contribute to users inside and outside our universities, at other universities across State boundaries.

And, secondly, the opportunity to educate and prepare the next generation of professionals is, to use Professor Josey's word, it's critical, and yet it does provide, again, an opportunity to do an awful lot with relatively few funds.

Mr. KILDEE. Yes, Dr. Josey.

Mr. JOSEY. Mr. Kildee, I would support what Dr. Dougherty has said. But, in addition, I think all of the titles need to be strengthened and supported, as we have suggested here today.

But, in addition to that, I would make a strong plea for strengthening Title II-B, in terms of the fellowships that are needed, because we have a critical shortage of librarians in the country, and, in many areas, children's libraries. As I said earlier, we have a need for minority librarians. And, you know, we would like to urge strengthening Title II-B and adding more funds so that we can get more fellowships in our library schools. That's my plea.

Mr. KILDEE. Thank you.

Mr. Davis.

Mr. DAVIS. I would certainly support the earlier comments. I think that the committee will have, I think, a tough job ahead of itself. Clearly, Title II-B, in terms of really the training, I think is clearly essential.

Certainly, parts of what we have talked about, in terms of Title II-C, are particularly significant as encouraging academic research libraries to share those resources as we move more toward what we hope eventually will be a national kind of data base that is accessible throughout the State.

Clearly, the international focus is one, as we move toward a global society, that is going to be increasingly important, in terms of our national competitiveness. So there are those two facets, in terms of Title II-C that clearly need to be funded and maintained.

Mr. KILDEE. Ms. Albright.

Mr. ALBRIGHT. I see the future of libraries as being able to keep up with the technological changes in the Nation, to be able to tie in to the information technology developed by NSFnet and by NREN. So I would say that I believe that the Title II-D is really critical to the development and to the viability of libraries.

I think that we can train, but if we can't get the word out, that's difficult. We can have the resources, but no one library will have enough. So if we can't share, I think that our viability will be questioned. So I would like to see the emphasis of HEA Title II as being one of networking and resource-sharing and then the monies being placed in those particular areas.

Mr. Coleman asked if we would like a mention of the NREN and its importance in this act. I think it would be important for Title II to say that libraries should expect to be part of the NREN and that Title II will be providing the resources to make that possible.

Mr. KILDEE. Ms. Bowman.

Ms. BOWMAN. It would be very difficult to pick two things, but, if I did, I would pick the strengthening of Title II-B—even though I didn't mention them in my oral remarks, Title II-B is critically important. I can't overly emphasize how important Professor Josey's remarks are. The shrinking pool of librarians coming into academic librarianship and other librarianship is a matter that concerns us a great deal, and we need to have more well-educated librarians.

And Title II-B is dear to my own heart, because it enabled me to go to school back in 1968 and 1969. I had started library school on a part-time basis, and had planned to continue that way while working full time, but through Title II-B I was able to complete my studies in 1 year, and that has made a tremendous difference in my life.

There are other people on my campus who have greatly benefitted by Title II-B. Our dean, Mary Lenox, is a very strong dean, and she would not be where she is right now today if she had not had Title II-B. I think that is just underlying all of our concerns in the profession these days.

And the second thing I would do would be within Title II-D to put an emphasis on cooperative efforts, the type of thing that we've been talking about here. I think the application of monies to try new and innovative things with technology needs to be done in cooperative and collaborative mode, and so I would like to see Title II-D emphasize that and reward those proposals that really would enhance resource-sharing through true cooperation.

Mr. KILDEE. Thank you.

Yes, Dr. Davis.

Mr. DAVIS. I would also like to say that I, too, am a product of a Title II-B fellowship which enable me to go back to school at the University of Michigan. It clearly would not have been possible without that kind of financial support.

Mr. KILDEE. Yes, Dr. Dougherty.

Mr. DOUGHERTY. I guess I'm the wrong generation, but it was the G.I. bill that made it possible for me to go.

[Laughter.]

Mr. DOUGHERTY. But I would say that, of the younger generation——

Mr. KILDEE. That's a perfectly honorable way to get an education.

[Laughter.]

Mr. DOUGHERTY. Thank you, sir.

Title II-B made it possible for Hiram Davis' generation to take their place as leaders, and without it I think it would have been very difficult.

Just this year, we had one, just one $25,000 fellowship that we could offer, and this is the first time that we've been able to make this available. And we had 25 applicants, more than double what we had last year. And 10 of the applicants were superb. The pool is there, if we can find the funds to support doctoral study.

Mr. KILDEE. Thank you very much. I really appreciate your responses. There is some good news for this year. The President recommended for all education, the whole gamut, a $700 million increase. I'm on the Budget Committee, we were able to raise that to $2 billion.

But Chairman Bill Ford has an insatiable thirst for dollars for education. And I came back and reported to Bill Ford that I had raised that $700 million to $2 billion in the Budget Committee, and he said, "That's good but we need some more." He went to the Rules Committee, and he got permission for a Ford Amendment, which will be on the floor, for an additional $400 million for education. And I commend Mr. Ford for that.

[Applause.]

Mr. KILDEE. So, as you're making the rounds on Capitol Hill today, support the Ford Amendment, because that will give us some more dollars in the Appropriations Committee to fund programs like this.

Thank you very much. This has been a very, very excellent panel.

Thank you, Mr. Chairman.

Chairman FORD. Thank you very much, and thank you for your kind remarks.

Do you pronounce your name Dougherty?

Mr. DOUGHERTY. Yes.

Chairman FORD. You know, that illustrates for me a problem. I have been saying to a lot of groups, as I pitch constantly for doing a better job on literacy in this country and for more preschool preparation, that I can't remember a time in my life when I could not read.

I cannot go back in my mind and remember when I couldn't read signs and cereal boxes and the front of the paper, and so on. I don't remember a time, no matter how young I take myself back, but I had one disadvantage. I had non-high-school-graduate, immigrant parents from Scotland, and they taught me to pronounce your name Dougherty.

[Laughter.]

Chairman FORD. And I learned the phonetic method of spelling. I had a lot of trouble with color, c-o-l-o-u-r. I was well into high school before I ever got that "u" out of there. So I know that there is more than one way to learn to read.

I would like to observe for the record, when we have this great group of librarians here, that when Dr. Dougherty was talking

about how important this research section has become, I checked with Tom, it was actually almost 11 years after the original act before we came down to writing that.

And I remember very clearly that the late Frank Thompson, who was a senior member of this committee, I assume under the prodding of Princeton, because it was in his district, and John Brademus of Indiana, who was always being prodded by Notre Dame and St. Mary's and who is now the president of N.Y.U., pushed and pushed for years, along with your lobbyists, to get us to add specifically a section to the legislation that would take into account the great need for strengthening research libraries.

And it took over 10 years after the original act was passed for II-C to become a part of it. You should be pleased to know it has been the easiest part to fund ever since, because it has shown proven results, and it has developed a constituency that helps us when we go fishing for the money to pay for the great ideas we have in this committee. We only get the ideas; somebody else has to pay for them.

I think the record would be less than perfect if those two gentlemen and their contributions over the many years it took to get that into the law were not recognized here. Brademus is still with us, he's still president of N.Y.U., and he has indeed been loaned to us, so to speak, for higher education reauthorization, because so much of what is in the law was really things that he and Frank Thompson did before, when I was sitting way down on that end of the committee and hardly ever got recognized to ask a question.

I thank all of you for your participation and for your preparation. I think that the prepared statements that you gave us today will be more than ample to defend the continuation for the next half-decade for the authorization of these programs.

I thank Mr. Kildee for taking over as Chairman. He is the Chairman, as you know, of the Elementary, Secondary, and Vocational Education Subcommittee. Some people, unless you live in Michigan, are not real excited about the fact that I am chairing the higher education committee and he's chairing the elementary and secondary committee. We will assure you we will take no more than our fair share.

[Laughter.]

Chairman FORD. Thank you very much.

[Applause.]

[Whereupon, at 11:21 a.m., the subcommittee was adjourned, subject to the call of the Chair.]

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